The Dental Digest

January 1930

Editor~
GEORGE WOOD CLAPP, D. D. S.
Publisher~THE DENTISTS' SUPPLY COMPANY *of New York*

THE DENTAL DIGEST

VOLUME XXXVI JANUARY, 1930 NUMBER 1

CONTENTS

THE DENTAL DIGEST

George Wood Clapp, D.D.S., Editor

Allan M. Johnson, A.B., D.M.D., Associate Editor

Published monthly, by The Dentists' Supply Company of New York, 220 West 42nd Street, New York, U. S. A., to whom all communications relative to subscriptions, advertising, etc., should be addressed.

Subscription price, including postage, $1.00 per year to all parts of the United States, Philippines, Guam, Cuba, Porto Rico, Mexico, and Hawaiian Islands. To Canada, $1.40. Great Britain and Continent, $2.75. Australia, $3.25. To all other Countries, $1.75.

Articles intended for publication and correspondence regarding the same should be addressed Editor Dental Digest, Candler Bldg., Times Square, 220 West 42nd Street, New York, N. Y.

The editor and publishers are not responsible for the views of authors expressed in these pages.

Entered as Second Class Matter, at the Post-office at New York City, N. Y., January 29, 1909, under the Act of Congress, March 3, 1879.

THE DENTAL DIGEST

VOLUME XXXVI JANUARY, 1930 NUMBER 1

Conservative Surgery of Follicular Odontomata

(DENTIGEROUS CYSTS)

By LEO WINTER, D.D.S., New York, N. Y.

Professor of Oral Surgery, New York University, College of Dentistry; Visiting Dental Surgeon in Charge, Bellevue Hospital; Oral Surgeon, Flower Hospital.

It should be remembered, by way of review, that the term *follicular odontoma* is applied to a tumor containing a tooth or teeth. The radiographic appearance of the follicular odontoma is so characteristic, when taken together with the clinical symptoms, as to present surprisingly little difficulty in making the diagnosis. As shown in Figs. 1-2, the presence of the teeth and the outline of the epithelial lining of the cyst are clearly defined. On excision the fibrous capsule, which is found outside the epithelial lining, is seen to be filled with a yellowish mucilaginous fluid, believed to be the degeneration product of the cells of the follicles of the enclosed teeth. Although the tumor is

Fig. 1
Radiogram showing a dentigerous cyst of the right maxilla.

Fig. 2
Radiogram showing the same case as in Fig. 1, viewed from a bite film.

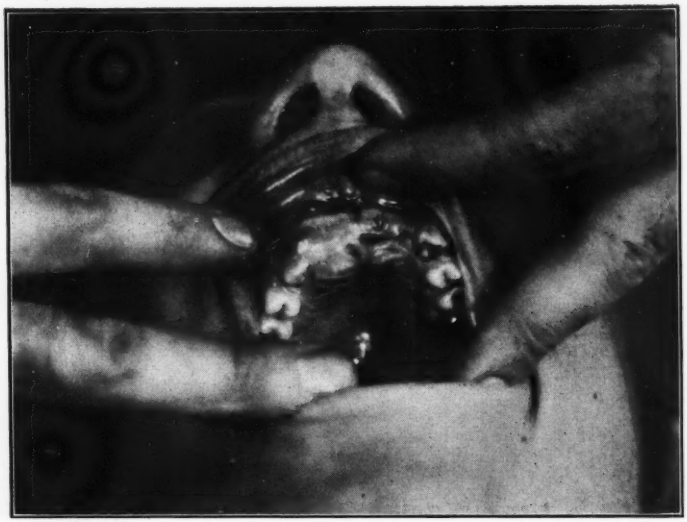


Fig. 3
Photograph of the patient in the case reported. Dentigerous cyst or follicular odontoma of the right maxilla.

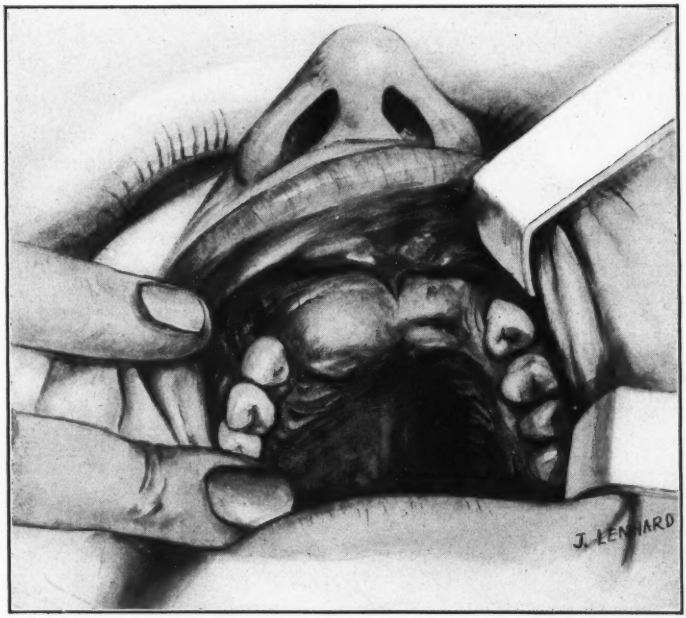


Fig. 4
Artist's view of the case reported.

benign, failure to remove every vestige of the cystic sac will inevitably result in rapid recurrence.

Where the odontoma is of any considerable size, there will be noticed a pronounced bulging of the maxilla (Figs. 3-4) in the region of its location. Depending also on its extent and its proximity to the buccal aspect, there will remain of the buccal plate of bone either a thin layer or merely a shell-like covering of bone. Palpation of this area will produce a parchmentlike crepitation together with the sensation of fluctuation of the contained fluid.

In the usual method of the surgery of folicular odontomata one of two technics is generally pursued. In both, the essential principle is embodied in the theory that the floor of the bone cavity resulting from the removal of the growth should be epithelialized and allowed to become continuous with the external surface of the maxilla. According to this view the important factor to be considered is the prevention of the recurrence of the cyst, regardless of whether or not the procedure advocated ruins the esthetics and the possibilities of restoration of the mouth. In the first or Partsch operation the mucous membrane and bone overlying the growth are summarily removed and the contents of the cyst evacuated, care being taken to leave the fibro-epithelial lining covering the floor of the bone cavity. Following this the edges of the mucous membrane rimming the cavity are sutured to those of the intact fibro-epithelial lining. In time it will be discovered that the columnar epithelial cells of the cystic sac will undergo a gradual metamorphosis into the stratified squamous type, so that the mucous membrane of the normal maxilla will be united to that of the depression resulting from the excision of the odontoma. Obviously, no bone regeneration can occur under the conditions produced, so the deformity becomes permanent.

In the second method the mucoperiosteal flap above the growth is carefully raised and preserved and the entire contents of the cystic cavity, including teeth, fluid and membrane, are enucleated. The mucoperiosteal flap is then tucked into the bone cavity thus formed, so that the periosteum approximates the normal healthy bone, and is held in contact with it by means of gauze sponges. No sutures are necessary. Although, after healing, a distinct deformity follows this operation, the abnormality is less extensive than in the procedure devised by Partsch, since both the thickness of the mucoperiosteal flap and the slight regeneration that occurs in the presence of the periosteal layer tend to reduce the hollow.

In contradistinction to these two types of cystectomies is the conservative procedure advocated by the writer. No claim is made to originality, since this operation has been described by various writers on oral surgery, who, nevertheless, have failed to stress its undoubted superiority over the Partsch type of surgery. A short description of the technic follows:

The proper incision (Fig. 5) is made to include the entire extent of the area to be excised, the greatest care being taken, because of the extreme thinness of the bone beneath, to cut through the mucous membrane and periosteum only. After the flap has been retracted,

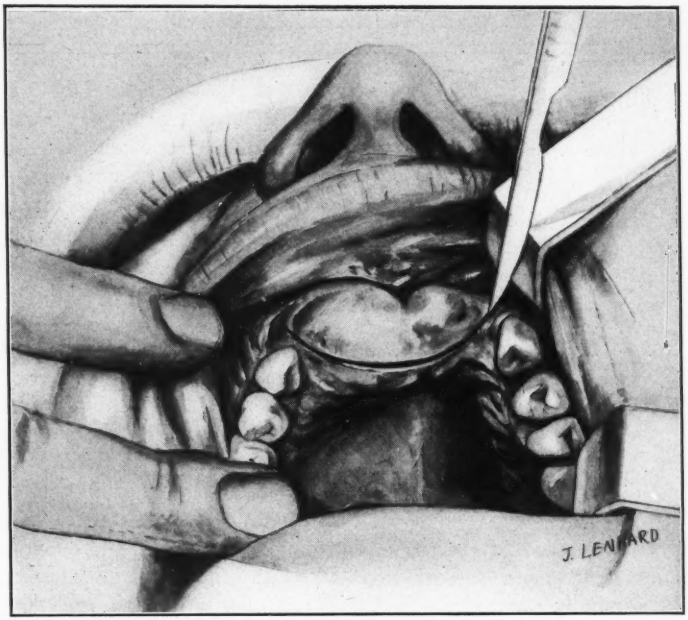


Fig. 5
Nature of the incision.

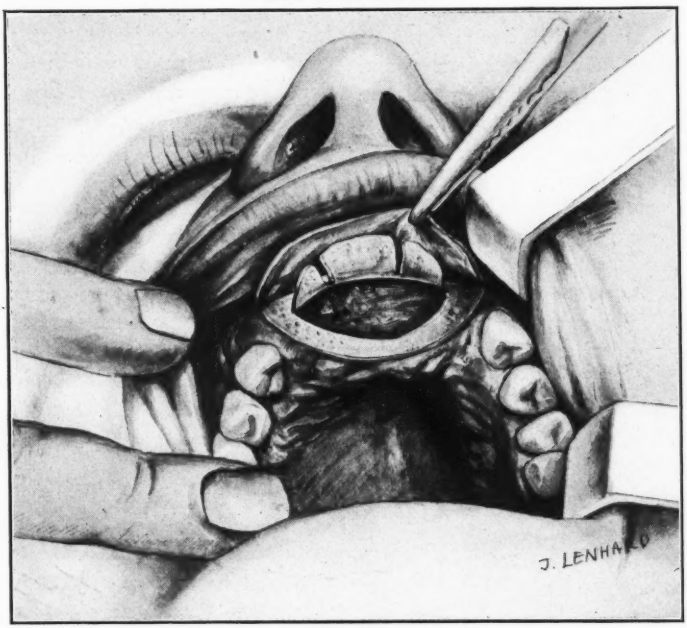


Fig. 6
Showing the method of exposure of the cystic membrane through raising the mucoperiosteal flap and the removal of the overlying eggshell-like consistency of bone.

hemostats, rongeur forceps, gouges and surgical burs are utilized to remove the overlying bone. The fibrous sac of the cyst can now be detected and is grasped with the hemostat (Fig. 6). If possible, the intact capsule is dissected away from the bone with the aid of a curette or a periosteal elevator. In any case every bone cavity is then lightly packed with gauze for the purpose of drainage and to maintain the normal contour of the bone. Irrigation and dressing every forty-eight hours are advised, this treatment being instituted less frequently as bone regeneration begins to diminish the size of the cavity.

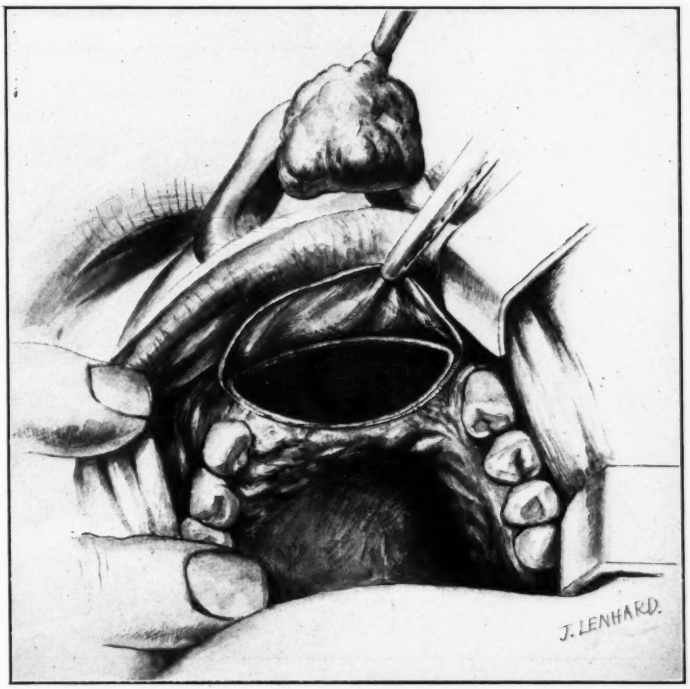


Fig. 7
Showing the mass removed and all sharp edges of bone made smooth.

vestige of fibro-epithelial lining is removed, exposing the normal, hard, healthy bone. All sharp edges and spicules of the maxillary process are trimmed and smoothed (Fig. 7) and the flap replaced and sutured (Fig. 8), so that union by primary intention may occur along the line of incision. The

Repair follows fast upon such therapy (Fig. 9), as may be expected from a consideration of the factors involved. The close coaptation of the margins of the incision is favorable for primary union. Furthermore, the formation of a normal blood clot, when associated with the osteoblastic qualities of a

healthy mucoperiosteal flap, presents all the requisites for rapid osteogenesis and calcification. As a result, although the time required for such treatment is longer than that necessary in the first two operations, the end condition is infinitely superior, rendering restoration through bridgework or partial dentures practical and obviating any unsightly deformity of the maxilla. The following is the report of a case of follicular odontoma treated by conservative surgery, as described above:

B. L., aged 16, Italian, barber, was referred to our service by his family dentist, who radiographed the right maxillary anterior region after noticing a tumorous growth in that locality and after obtaining a history of the non-eruption of the right maxillary central and lateral incisors (Fig. 1). Pressure upon this area gave evidence of fluctuation and elasticity.

New radiographs were made (two No. 1 films and one No. 2 bite-film), disclosing what was diagnosed as a follicular odontoma or dentigerous cyst (Fig. 2). The growth was enucleated en masse under local anesthesia, with a 1.5% solution of novocain suprarenin, and was found to be 2.4cm. long, 1.9cm. wide, and 1.8cm. high (Fig. 10). After being cleaned thoroughly, the bone cavity was closed by replacing the muco-

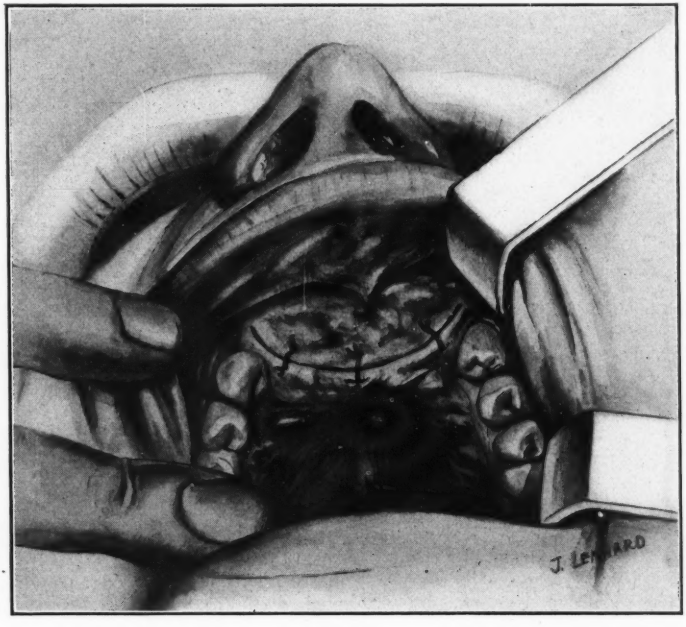


Fig. 8
The wound sutured.

Fig. 9
Photograph of the patient eight days after the operation.

periosteal flap, two sutures being taken. No dressing was used, so as to allow the formation of a normal blood clot. The formation of this clot is greatly aided through the use of the infra-red rays and the ultra-violet rays. Every forty-eight hours the patient is placed under the infra-red rays for thirty minutes and then the ultra-violet rays are applied, beginning with a two-minute

Fig. 10
Photograph of the membranous sac with teeth enclosed which was removed en masse.

application and increasing the dosage at each succeeding visit until a maximum of five minutes is reached. This procedure aids very materially the comfortable, uneventful recovery of the patient, the infra-red rays through opening the blood-vessels bringing an abundant supply of blood, and the ultra-violet rays accelerating the deposition of lime salts. Fig. 9 shows the condition of the tissues eight days after the operation. One horsehair suture was still permitted to remain in position for ten days. Bleeding may be controlled effectively through the use of Capsella Bursa Pastoris, which is known as Styptysate.

From a consideration of the data outlined the rationality of conservative measures in the surgical treatment of follicular odontomata will be impressed upon the mind of the operator, since the principle that surgery is not an end in itself but a means to an end, that end being the conservation of normal tissue, is satisfied in every detail. Preserve—do not destroy!

140 West 58th Street.

The Face-Bow Record

By JOSEPH S. LANDA, D.D.S., New York, N. Y.
Chief, Prosthetic Clinic, New York University, College of Dentistry

It almost amounts to what Milton called "confusion worse confounded" when we have to define a definition. A scientific definition should be concise, exact and clear. The best definition of the face bow, to my knowledge, is the one which reads: "A face bow is a device which serves the purpose of measuring the positional relationship of the ridges and the teeth to the centers of the condyles."

The first question that arises is: What particular center of the condyle do we have in mind in this definition? Is it the geometric center of the condyle head, or is it the center of its physical mass?

The second question, which logically follows the first, is: What ways and means have we at our command to determine either one of the two aforementioned condylar centers while we are recording individual measurements on the face and head?

The third question, and one of equal importance with the first two is this: The mandible being the only movable bone of the skull, in what position do we fix its movable points (the condyle heads) when we are measuring their distance from a fixed point of the head (the maxillary ridge)?

It is clear to anyone that the so-called *centers of the condyles* will assume different positions in the three dimensional planes, depending on the great variety of positions the mandible is capable of assuming during the taking of the measurements. Centric relation of the mandible to the maxilla, protrusive relation, right and left lateral relations, correct degree of jaw separation, excessive and insufficient degree of opening of the jaws—all these factors will place the condyle heads in different positions in their relation to the fixed points of the head (the maxillary ridges).

The argument that some men may advance, in order to avoid the difficulties growing out of a discussion such as this, is that in taking the face-bow measurements we are not so much interested in the exact location of the centers of the condyles as we are in locating the anatomical axis of rotation. This argument is further strengthened by a theory that the anatomical axis of rotation very often passes outside the centers of the condyles. This theory will not hold water in my opinion, because upon examining a great number of skulls and heads I have found that in practically all cases (save in extremely rare pathological conditions) the anatomical axis of rotation passes through the middle part of the glenoid fossæ and consequently through the middle of the condyle heads. Furthermore, it would be immaterial, in defining the condylar centers, whether we had in mind either the geometric centers of the condyle heads or the centers of their physical masses, because we have no means at our disposal of determining those centers with any degree of accuracy.

The condyle heads are located in the

glenoid fossæ on the under surface of the skull and *in vivo* are thickly covered on either side with soft tissue. We have no means of penetrating these condyle heads and yet we pretend to know where their centers are located. In using the expression *centers of condyles* in our definition of the face bow we are guilty of what Chaucer called *ignotum per ignotius,* that is, we are trying to explain something we do not know (the face bow) by something which is still more unknown (the centers of the condyles).

In view of the above I would suggest the following definition of the face-bow: "The face bow is a device which serves the purpose of measuring the positional relationship of the maxillary ridge or teeth to the middle of the glenoid fossæ in three dimensions, namely, sagittal, vertical, and anteroposterior." We should thus always measure the distance of a fixed point of the head (the glenoid fossa) from a fixed point of the face (the maxillary ridge), and this, in turn, would enable us to determine practically and with sufficient accuracy the anatomical axis of rotation.

It certainly is an unfortunate fact that so many dentists, some of very high standing, neglect the face-bow record, treating it as an unnecessary complication in full-denture technic. I consider the face-bow record, on the basis of my own experience with it, of great importance in the mounting of casts on an articulator for study purposes, be it in prosthodontia, orthodontia or periodontia.

To appreciate the significance of the last statement properly, a few words are in order about occlusion and the dental machines which are used for studying occlusion, that is, articulators.

Occlusion, according to the definition of Milo Hellman, is "that relative position of the teeth of a dentition in which the mandibular teeth are in contact with the maxillary teeth." Let us consider a normal dentition in its relationship to the human articulator, the condyle heads and glenoid fossæ with their investing and associated structures. In every normal dentition there should be harmony between the movements of the occlusal surfaces of the mandibular teeth upon those of the maxillary teeth and the movements of the condyle heads in their glenoid fossæ. This is due to the fact that the glenoid fossæ as well as the condyle heads are being shaped by the amount and nature of the work that the dentition performs. It follows that if the relative position of the teeth of a dentition is changed, in the case of a normal or an average occlusion, certain changes must be effected in the glenoid fossæ and the condyle heads and their investing and associated structures, in order to have harmony in the masticatory apparatus as a whole. Thus, if we analyze only the opening and closing action of the jaws, these movements are far from being hinge movements, as they are called. The movements of the mandible in opening and closing are very complex and so delicate in their complexity that even the finest instruments in the hands of profound students of occlusion have failed to establish the exact nature of these movements. However, from the studies of Walker and from my own careful measurements on individuals with normal dentitions for the purpose

of determining the different positions that the condyle heads assume with different degrees of jaw separation, we now know that with an excessive degree of opening of the jaws of about two cm. we were able to measure the displacement of the gonions and condyle heads. The gonions (the most distal points of the angles of the mandible) will shift backward, while the condyle heads will move downward and forward with an excessive degree of jaw separation.

It is well known that the protrusive movement of the mandible with the mandibular teeth in close contact with the maxillary teeth involves also a movement of the condyle heads downward and forward. However, the movements of the condyle heads, apparently similar in the two instances mentioned above, differ greatly from one another. In the first instance (movements of the condyle heads with the opening of the jaws) the condyle heads move downward and forward but in the direction of a resultant of two forces, one perpendicular or approximately so, and the other oblique (Fig. 1). However, in the second instance (movement of the condyle heads in a protrusive movement of the mandible with the mandibular and maxillary teeth in close contact) the condyle heads move downward and forward along an oblique line more or less in close contact with the condyle path (Fig. 2).

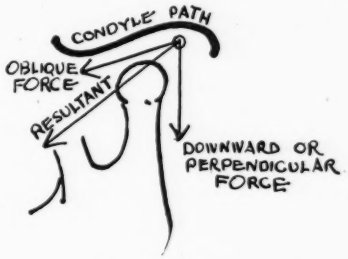


Fig. 1

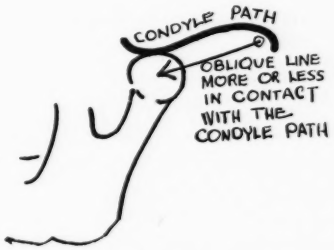


Fig. 2

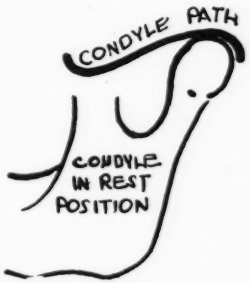


Fig. 3

Let us analyze now what happens to the condyle heads when the mandible is in a right or left lateral position to the maxilla. One of the condyle heads becomes the vertical rotating arm, whereas the other becomes the movable arm, its direction being downward, forward and slightly inward.

It follows, then, that the anatomical axis of rotation is in its normal position when the mandible is in centric relation to the maxilla. The condyle heads are then in the middle of the glenoid fossæ (Fig. 3). When the mandible is in protrusive relation to the maxilla, the

anatomical axis of rotation has changed its position in two dimensions—anteroposteriorly, depending on the extent of the shift of the mandible, and vertically, depending on the steepness of the condylar inclination.

When the degree of jaw separation is excessive, the anatomical axis of rotation also has changed its position from the normal in two dimensions, anteroposteriorly and vertically, and both will be dependent upon the extent to which the degree of jaw separation is in excess. On the other hand, when the mandible assumes a lateral position to the maxilla, the anatomical axis of rotation departs from the normal in three dimensions, anteroposteriorly, laterally and vertically. The shift in all these dimensions is dependent upon the amount of the lateral movement of the mandible and the steepness of the condyle path.

From careful study and observation we know also that in the two parts of the human masticatory apparatus, occlusion of the teeth on one hand and the condyle heads and glenoid fossæ with their investing and associated structures on the other hand, there should be a harmony when the human dentition is functioning normally. In our work with articulators we look for harmony in movements of the anterior portion of occlusion (occlusion of the teeth) with the posterior portion of occlusion (parts representing the condyle heads and glenoid fossæ).

Now, whatever articulator we may be using, there must be one common feature in all of them—harmony between the anterior and posterior portions of occlusion—and this harmony must be relatively and absolutely the same on the articulator as it is on the human face and head. In other words, in constructing artificial dentures the particular positional relationship that the maxillary ridges and teeth assume toward the middle of the glenoid fossæ (the anatomical axis) must be reproduced on the articulator in such way that the maxillary cast shall assume exactly the same positional relationship toward the condylar elements (the articulator axis).

It is clear, therefore, that if we should set our casts in any one of the adjustable articulators arbitrarily without first securing the face-bow record, we should sooner or later encounter difficulties, for the positional relationship of the casts toward the articulator axis will be different from the one the finished denture will assume toward the anatomical axis. It is most remarkable that the error will always be committed in all three dimensions simultaneously, and there is as yet no *perpetuum mobile* incorporated in any one of the existing articulators that would compensate for all the errors made in all three dimensions at one time. By omitting the face-bow record, or by using it indiscriminately, there would result a change in the direction and magnitude of the forces. Thus a denture with a faulty relationship of its casts toward the articulator axis may be beautifully balanced on the articulator, but when introduced into the mouth it will reveal premature contact in some areas, lack of contact in others and cusp interference in lateral and protrusive movements of the mandible.

We are brought to the conclusion, then, that those who use adjustable articulators in their work invite trouble

by omitting the face-bow record, and I am so fully convinced of the importance of the face-bow record in full and partial denture prosthesis that even those who are using semi-adjustable articulators would benefit, I am certain, from an accurate face-bow record.

All of us, no doubt, are familiar with the disappointment of finding the centric relation in the finished denture inaccurate, though we were almost positive of its correctness when we took it. Very often this annoying experience is the result of omitting the face-bow record. The so-called *wrong bite* in such cases may actually not be wrong. What we actually have is cusp interference in closing the jaws, which was caused by the fact that the casts were orientated on the articulator in their relationship to the articulator axis in a manner different from the way in which the ridges in the mouth are orientated toward the anatomical axis.

1828 Topping Avenue

Dental Caries and Pyorrhea*

Another Approach

By F. W. BRODERICK, M.R.C.S., L.R.C.P., L.D.S.

Fifth Article

One of the most important points that I am attempting to press home in all my writings on this subject is that the practical and important consideration in the prevention of dental troubles is to concentrate on the susceptibility to caries or to pyorrhea, the conditions, that is, which allow the exciting causes to bring about tooth destruction. The very fact of the existence of an immunity which allows of their preservation when all circumstances of local environment are such that they should inevitably be destroyed, if the present accepted theories be the all in all, proves indisputably that if the science of prevention is to be understood, these factors must receive consideration.

In just so far as there may exist neither a marked immunity nor a marked susceptibility may measures be usefully taken to minimize the harm done by exciting causes, and in this manner emphasis laid on toothbrush cleanliness and the limitation of those foods which offend primarily on account of their physical properties may possibly play some part in diminishing the ravages brought about. In the presence of a marked susceptibility, however, we know that these will be useless, as in a marked immunity we realize that they will be unnecessary.

Nevertheless, an absence of a marked immunity is in reality nothing more than the presence of a slight susceptibility, and, as normally an absolute immunity should be the rule, by far the most important factor in prevention must concern the predisposing causes. If in the face of all the clinical evidence daily before us we think and teach otherwise, we deceive ourselves.

In the previous articles of this series I have attempted to show that there is evidence in favor of these predisposing factors being those which lead eventually to a condition of a threatened acidosis in the case of caries and of a threatened alkalosis in pyorrhea. Although I do not presume to suggest that I have proved my hypothesis, not being in a position to test it experimentally, the clinical evidence, the result of over ten years of practice with these ideas in mind, confirms me in the truth of my ideas. So convinced, in fact, am I that a regime built up in accordance with the suggestions brought forward in an abstracted form in these papers and explained more fully in my book *Dental Medicine* will satisfactorily prevent the occurrence of either caries or pyorrhea that I am taking every opportunity of putting my views before the dental profession in the hope that the more thoughtful, progressive and unprejudiced section may be persuaded to consider the

* Reprinted from *The Dental Magazine and Oral Topics*, October, 1929.

details on which the theories rest, try them out in practice, and, by adding their clinical experience to my own, allow us to take one more step forward along the road of preventive medicine.

In order to utilize the space permitted to me in this article to the best advantage, it may be advisable at this point briefly to recapitulate certain details which have been mentioned or hinted at in certain of the previous ones. In the first place, I have suggested (1) that the moment of commencement of caries from an etiological point of view is the moment decalcification of the enamel commences, not when it has penetrated throughout the whole thickness of the enamel and produced a cavity; (2) that this decalcification will result from a change in reaction of the saliva sufficiently below the isoelectric point to allow an abstraction of lime salts from that enamel; (3) that an estimate of salivary reaction at any particular moment may not be sufficient guide, in that this, being dependent upon metabolic circumstances, will differ from moment to moment, the important factor being to attempt to arrive at an idea of the greatest acidity to which it may reach in times of greatest stress, as compared with that of the greatest alkalinity to which it may return at another, when by physiological processes the damage done by the former may be replaced by the recalcification produced by the latter; (4) that any estimations of salivary reaction arrived at by the capillator must be considered in relation to age groups and all other circumstances of the patient; and (5) that with this visualization of the etiology of caries the matter of the vitality of the enamel is not an important consideration, in that the changes are to a great extent, if not wholly, dependent upon physical phenomena, osmotic and electrical. (I do not wish to be understood, however, to deny a decalcification, a recalcification or a hypercalcification from within the tooth, a process which, if possible, would depend upon the very same circumstances as those which act from without.)

Secondly, I have suggested (1) that the reaction of the saliva is simply a reflex of metabolic activity at the moment, (2) that alterations in this reaction are dependent upon changes in the carbon dioxid content of the blood, (3) that these changes are themselves the result of alterations in the acid base equilibrium of the blood consequent upon differences in the production of acids and bases in the process of living.

And, thirdly, I have suggested that individuals differ on account of constitutional make-up in their powers of combating tendencies to upsets in blood balance.

All these matters must be considered if the prevention of caries is to be satisfactorily accomplished.

Cases that Benefit Most

Cases of acute acidosis, the result of acute infections, are unfortunately but rarely in our hands to treat, but the effects of this upon the teeth are obvious to us all. However, where we have a say in the matter, we should insist upon energetic treatment of this state, alike for the benefit of the general condition as for the preservation of those organs. It is more in the chronic

cases where the reserves of alkali are normally low—where compensation can be attained as a general rule, with possibly acute symptoms showing themselves as bilious attacks at intervals—that we can do so much not only for the teeth but for the general well-being of the patient by an appreciation of the circumstances which the mouth presents, and which we as dentists have a much better opportunity than the physician to notice. Here, by working out a regime by which the necessity for compensation is eliminated, we can often gain the eternal gratitude of the parents and watch an almost miraculous change in physical fitness taking place before our eyes.

It must be remembered that many of these cases of chronic acidosis (and much the same may be said of the cases of chronic alkalosis) are not appreciably affected thereby, in that compensation is attained without undue difficulty. Nevertheless, as a necessary result of this compensation, changes are slowly taking place, consequent upon the drain of alkali, which will eventually show themselves in various organs of the body, including the teeth. It has been shown, for example, that a shortage of alkali equivalent to from 1,200 to 1,500 grains of sodium bicarbonate can exist in an adult without any acute symptoms of an acidosis appearing. It will be obvious, therefore, that many individuals may be suffering from a mild acidosis and not in any appreciable manner be incapacitated thereby. This circumstance will account for the fact that many of our patients are not sick persons in the usual sense of the term, although I would suggest that they are suffering from or have suffered from an acidosis. On the other hand, a large number of the children who attend us for dental treatment are obviously not thriving as they should, even though their physicians are unable to detect evidence of disease.

The First Step

With a patient presenting himself with carious cavities it will first of all be necessary to determine whether the condition which was responsible for the original enamel decalcification still exists, for it will be understood that a condition of acidosis which may have previously existed, and which was the cause of the enamel destruction, may in the meantime have ceased to be present, although the cavity which resulted will remain. The most common cause of caries when the saliva is normal will be found to be a recent acute illness from which the patient has recovered. But such conditions as the administration of a general anesthetic may act in the same manner. In these cases the question of prevention does not arise.

Effect of Anesthetics on the Teeth

As an illustration of the effect of anesthetics on teeth I should like to mention the case of a small boy who had visited me regularly since the age of three and for the three succeeding years remained absolutely free from caries. Suddenly I was surprised to find no less than eleven cavities requiring filling. On inquiry I found that since his last visit a few months before he had been operated on for tonsils and adenoids, and on going into the mat-

ter I discovered that chloroform had been administered, and that considerable sickness had followed the anesthetic. A boy of my own some eight years ago also had a chloroform anesthesia for the perforation of both eardrums for an acute otitis media and developed an acute acidosis of such severity that the question of an intravenous saline injection was considered. This was followed within a month by his first filling, and in the succeeding years he has needed only one small filling more, showing, I think, a definite immunity converted into a susceptibility through the anesthetic.

Where, as the result of a series of salivary estimations, it would appear that a chronic acidosis exists, the case is very different. Here all the circumstances of the patient must be considered with the utmost care. These matters will include the general health, constitutional diathesis and hygienic circumstances, in addition to the diet, and efforts will have to be made to determine whether the relative acid excess is the result of an excessive formation of acid or a diminution in the available alkali or, possibly, a combination of both.

The Most Important Constitutional Disability

It is impossible to discuss here with any pretence of completeness a matter of considerable magnitude. I must content myself, therefore, with describing what is probably the most important constitutional disability from the point of view of dental caries. It happens that for the complete metabolism of fat it is necessary for a certain amount of carbohydrate to be present and to be metabolizing at the same time. In its absence the fat is only able to break down into fatty acid and glycerin. These acids then enter the blood, and from their neutralization there may result an acidosis.

In states of starvation such as occur in the early stages of acute illnesses this type of acidosis is not uncommon, from the fact that the carbohydrate reserve will usually give out before that of the fat, and an acidosis of this type, known as a ketosis, will complicate the acidosis brought about by the increased catabolism of the fever. The treatment of ketosis is obviously to increase the carbohydrate reserve, which is most easily done by feeding with sugar in some form. In medicine it is now practically a routine to give large doses of glucose in all acute conditions. It is also usual to feed patients being prepared for an anesthetic in the same manner, so as to insure a reserve of sugar during the following twenty-four hours. It must be remembered, however—and this is a circumstance which is often overlooked—that glucose feeding will only prevent or cure the ketosis type of acidosis and will not increase the supply of alkali which may have been diminished from other reasons. It simply prevents a further depletion to neutralize the abnormal acids formed in the incomplete metabolism of fat.

In addition to these cases of acute ketosis, the result of starvation, it is now recognized that cases of chronic ketosis are not at all uncommon. These are brought about through an inability on the part of patients, usually small children, to store an adequate supply

of sugar as glycogen. These reserves are soon exhausted in the intervals between meals, and a mild carbohydrate starvation occurs which will bring about an acidosis for the same reason.

Sugar Starvation and the Teeth

Now, sugar—and all carbohydrate is metabolized as sugar—is the main source of energy, whether this be physical or mental, and consequently its necessity in childhood is most urgent. It so happens, however, that there are certain children whose ability to store this is deficient—a difficulty brought about through some constitutional defect—and if this is combined with an energetic personality, as it so often is, a sugar starvation is easily produced which may be disastrous to the teeth.

Cameron and Osman have discussed the nervous and the debilitated child and have shown that in practically every case covered by these descriptions there exists this difficulty. They have also demonstrated that these patients improve enormously when this symptom is taken into consideration in the treatment.

The Desire for Sugar

The avidity of these children for sugar is amazing. The following extract from Osman's paper will show the amount that they can consume in the twenty-four hours. It demonstrates also that the desire of children for sugar and their detestation of fat is not a matter of original sin, but rests upon a physiological basis. "The amount of sugar to be given varies in every case and in different circumstances. Thus a child who remains free from attacks on a certain allowance will require an extra supply before attending a party or going for a ride or being subjected to any other stimulus known to cause attacks. The following rules have been successful in a large number of cases and may be of value as a rough guide. At least two level teaspoons of sugar are given in a cup of weak tea for breakfast and tea. For dinner lemonade sweetened with sugar is given. Sandwiches of bread and butter with Demerara sugar are taken at each meal, and in some cases an extra sandwich at supper. Milk is allowed in tea and in milk puddings, but is not recommended as a beverage, though if desired it may be taken after being skimmed. Glucose powder, two or three drams, is given in lemonade three times a day between meals, or, when this is not possible, the child is allowed and even encouraged to suck sweets instead. The extra glass of milk often provided in the mornings is forbidden, and often the school authorities are informed that the child should be allowed to suck sweets in school."

It requires some courage in the present state of dental thought to suggest that sugar will prevent the occurrence of caries. But my experience, which is now somewhat considerable, is such that I am convinced that in this type of case, in which caries is rampant, treatment along these lines does act like a charm and when properly carried out absolutely prevents tooth destruction. But here again, as in the case of acute ketosis, I would stress the point that in addition to treatment by sugar feeding the reserves of alkali must be built up.

Leaving the matter of constitutional

disabilities which will bring about a low threshold to an acidosis, I should like to say a few words on personal hygiene.

Habits of Life

When it is remembered that all types of exertion are productive of acid formation, it will be understood that the overactive child, whether this be physical or mental overactivity, is by its temperament handicapped in its power of keeping a stable acid base blood equilibrium, and consequently the habits of its life must be regulated with this in mind. This item is well illustrated in a remark that was made during the discussion of a paper of mine recently when a dentist said, "At a discussion dealing with prophylaxis and the incidence of caries and its prevention one of the members, who was dentist to a school for orphans, was asked what condition the teeth of the orphans were in, and he replied that they were admirable. . . The next question was as to what this condition was due, and the dentist made the astonishing reply, which was at first received almost with laughter but after consideration was thought to be wise, that the children went to bed early." I suggest that there is more in this than perhaps the dentist himself knew, and that the rationale is explainable along the lines of these papers.

Although one sees here a reason for the energetic, excitable child being prone to develop caries, the converse—that the dull, heavy person should escape—is not necessarily a fact, because the production of acids as the result of activity is but one method of acid excess, as it is but one part of metabolic activity. It so happens that the whole matter is one of perfect balance. If, for example, the intake of food is not balanced by the output of energy in some form or another, there will result an excess of unoxidized food products, which will be for the most part acids, which will throw a strain upon the available alkali, and this will be productive of an acidosis.

Diet—Its Place in Preventive Dentistry

This brings us to the question of diet, which, though a most important part of the treatment in the prevention of an acidosis, is by no means the be-all and end-all of preventive dentistry, as is so often taught.

As our object is to bring about a balance between acids and bases in the blood without calling upon the compensatory powers of the body to exceed physiological limits in maintaining equilibrium, it will be obvious that the matter of the food supply is of importance, and the regulation of intake, balancing those foods which in metabolizing produce acids against those which produce alkalis, will materially help in bringing about results.

If we examine a list of foodstuffs listed according to their metabolic end-products, it will be seen that the meats and the cereals end up as acids, whereas the fruits and vegetables produce alkalis. Consequently diets must be so arranged that the former do not overbalance the latter. In the case of children, therefore, it is essential that fruits and vegetables predominate, especially as it is these foods which supply most of the mineral constituents which are so necessary.

One point in this connection would seem to have caused some misapprehension. It has been thought by some that the acid flavor of the fruits indicated that acids were being taken when these were eaten, and that eating such substances as orange juice really means the consumption of acid substances. In reality this is not so, as these organic acids, uniting with strong bases, give alkalin end-products and tend to increase alkali reserves.

It will be seen, therefore, that a diet built up with this end in view will satisfy all the needs for vitamins, which doubtless play some part in the absorption of calcium salts.

Calcium Starvation

Mrs. Mellanby, who stresses the necessity of Vitamin D, is doubtless so far correct in her suggestions, as her experiments prove, though I would suggest that the importance which she gives to the subject is exaggerated, for reasons that I will show.

In all cases of a tendency to a calcium starvation it is necessary to consider three questions: (1) Is a sufficiency of mineral salts provided in the dietary? If not, this matter must receive consideration either by increasing those items which contain them in abundance, which is the obvious plan, or by administering them as a medicine, which seems to me unnecessary. (2) Is the calcium which the patient ingests in the food being readily absorbed? If not, it is quite irrational to attempt to overcome the difficulty by administering a greater quantity. (3) Is the calcium ingested and absorbed afterward available for its proper purposes or is it being utilized for the purpose of neutralizing an excess of acid? In this case it is to the acidosis that attention must be directed rather than to the shortage of calcium.

If these matters are considered, I would suggest that the question of vitamins does not arise, in that the correction of the first item will insure a sufficiency.

Absorption of Calcium Salts

The question of the absorption of calcium salts through the intestinal mucosa is wrapped up with the matter of the acidity of the gastric juice, for Telfer has shown that these salts are absorbable only in an acid medium, which limits their usefulness to the stomach and the upper part of the small intestine. The importance of this I shall have occasion to refer to in a subsequent article, but I mention it now, as it probably shares with sugar shortage an importance in being one of the constitutional factors in the production of caries, since in cases of hypochlorhydria there occurs a calcium starvation due to this difficulty of calcium absorption, even though an ample supply be provided in the food.

A lack of appreciation of this fact has misled Mrs. Mellanby in the interpretation of the results of some of her experiments, in which she claims to have disproved my suggestions. This worker fed a number of children on three separate diets and compared the number of new cavities that appeared within a certain time.

Three Experimental Diets

The first diet was so built up that it supplied an excess of vitamins and the cereal content was reduced to a

minimum—a diet, in fact, in which the basic elements predominated. The second diet showed a shortage of vitamin content, but to it was added a quantity of sodium bicarbonate so that the basic ash was in excess and larger than in either of the others. The third gave a still larger vitamin deficiency and an excess of cereals, called by her *anti-calcifying substances,* but without the added bicarbonate. It was found that the amount of new caries with the first diet was very small, but with the second and third diets it was very materially greater, considerably more so with the second than with the third. Consequently, argued Mrs. Mellanby, the effect of increasing the alkalin element had had no good effect, but rather made matters worse, and therefore the suggestion that caries was the result of an acidosis was erroneous.

The Correct Interpretation

From what has just been said, however, as to the effect of the absorption of calcium on the acidity of the gastric juice it will be seen that the correct interpretation is exactly the opposite. The effect of adding sodium bicarbonate to the diet would very materially diminish calcium absorption and lead directly to a calcium starvation, diminishing the reserve of alkali, and, leading in this way to an acidosis, increase the amount of caries. As it was found that the teeth under the second diet were worse than those under the third diet, it shows that this matter of an acidosis had had a very material effect on the teeth.

As a matter of fact, Pickerill years ago showed that the administration of alkalis with the food affected the teeth adversely, and Mrs. Mellanby simply made a poor diet worse by the addition. The lesson to be learned, however, is that if it is required to administer alkalis, this must be undertaken in such a manner that the reaction of the gastric juice is not affected thereby or the last state of the patient will be worse than the first.

If we find that the first two questions that we have considered as possible causes of calcium starvation are not present, we are driven back upon the matter of a chronic acidosis, which, in using the alkalis ingested and absorbed for an urgent although an incorrect purpose, viz., that of neutralizing excess acid, is preventing their being available for tooth preservation.

Additional Help Often Necessary

Having considered all these points and having corrected all possible faults, constitutional, dietetic, and otherwise, it may be that we find that the trouble is overcome, that the saliva has returned to the normal for the age group, and that the susceptibility to caries has given place to an immunity. But in a very large number of cases it will be found that for this purpose it will be necessary to provide additional help in building up and in preserving a reserve of alkali that will be proof against all emergencies.

I would point out that although our attention has been focused upon the salts of calcium in considering our problem, it is not of necessity a shortage of these salts only that is important but rather of the total available alkali, of which calcium is only a part. It will, however, of necessity follow that a shortage of the one will affect

the other, and, conversely, the addition of either will increase the supply of both, in that an acidosis will utilize any alkali available to neutralize the excess acid, and the addition of a sodium salt will preserve a calcium one. Consequently our problem is not so much to increase the amount of calcium directly as to preserve that which is already there, and the provision of an easily absorbable alkali such as sodium bicarbonate will best serve this purpose.

Administration of Alkali

Now, this alkali must be administered, as we have seen, in such a manner that the gastric acidity is not interfered with, and to get this result it is best to give it on an empty stomach the first thing in the morning, in which case it passes right through the stomach and is absorbed from the upper part of the intestine without danger or difficulty. The matter of dosage is not of great importance so long as a sufficiency is given, and for this one must consider primarily the amount of excess acid that it is required to neutralize and the amount of reserve that it is required to build up rather than the age of the patient who is being treated. It is rather a pity that for a substance like bicarbonate of soda, which is not a drug comparable with morphia and strychnin but a natural constituent of the body, a definite dose should be given in the pharmacopeias, as it would seem to compare it with the definite drugs and to limit the amount that it is considered safe to administer. It does so happen that symptoms of an alkalosis have been brought about by the administration of massive doses of the alkalis, but these were experimental and are hardly likely to be given medicinally. Even in these cases it is, however, only a very short time before the compensatory powers of the body, which are able to deal with almost unlimited quantities of alkali, are able to get rid of the excess and, by kidney elimination, by a diminished respiration, and by an alteration in the ammonia formation, to bring about a balance.

The initial doses, therefore, should be considerable in an effort to catch up with the present deficiency, and amounts up to a dessertspoonful for several mornings in succession can be safely given. When it is found that compensation is no longer necessary, all that will be required will be to provide a sufficiency to keep this happy state of things in being, and the amount can be reduced to a teaspoonful daily or once or twice a week.

It must be remembered, however, as pointed out by Osman in dealing with sugar shortage, that at all times of particular stress a larger dose must be given, as these will assuredly lead to a relapse unless prepared for in this way.

Systematic Overbreathing an Aid

There is another method that I utilize in my practice for the purpose of helping these children to deal with their tendencies to acid excess, and that is by a systematic overbreathing, which I combine with the administration of alkalis, the former being a method of directly eliminating acid, the latter one of providing alkali for neutralization.

We saw, when considering the etiology of pyorrhea, that a state of alkalosis could be brought about by

overbreathing, and that it was increased if this was undertaken on the top of alkali administration. In addition to the direct benefits thus brought about, the increased chest expansion resulting therefrom serves its own purpose.

The simplest instruction to give the parent is to stress the expiratory effort, when increased inspiration will follow of necessity. It will frequently be found that at the end of a few long, deep breaths the child will complain of a feeling of giddiness and a buzzing in the head. This indicates that an alkalosis is developing and is the signal to cease the overbreathing for a time. For this reason I suggest that the exercises be undertaken sitting or lying down. It will, however, be found that in a day or two these symptoms pass off and the breathing can be done much more frequently.

By a combination of these two methods of treatment a chronic acidosis can be prevented in every case. Moreover, they are simple and rational, and if persevered in it will be found that an immunity to dental caries will develop which will be a source of satisfaction to the parents second only to the great improvement in the general health of the child from the removal of a handicap preventing proper growth and development.

Note.—In the first article of this series I used the words, "Kirk says, 'For every child a tooth.'" This, perhaps, is misleading. I took the quotation from a paper of Dr. Kirk's in which he says, "It is also a well-established fact that pregnancy tends to inaugurate a period of susceptibility (to caries). The axiom, 'For every child a tooth,' has its equivalent expression in practically every civilized tongue." I should, perhaps, have made it quite clear that although Dr. Kirk agrees that there is an increased susceptibility in pregnancy, he is not responsible for the aphorism, which, like all aphorisms, rather overstates the case.

Simplified Technic for Plaster Profile Record

By ORVILLE A. RALSTON, D.D.S., Ainsworth, Nebraska

Leading men in the field of denture prosthesis have long recognized the importance of making accurate records of the patient's face before the teeth are extracted. Some prosthodontists have given us valuable technics on the construction of these records and, in all fairness, they should be mentioned at this time.

Gillis introduced a method of bending a soft copper wire to fit the profile of the face along the median line. This system was very good, but the wire was distorted too easily and was not very accurate as an impression.

Bruening and Stansbery both have written essays concerning photographic records.

Howard uses a plaster impression method which is accurate, but there are quite a few steps in the technic, and the impression must be transferred to cardboard because the plaster is too frail.

My chief objection to any photographic technic is that it requires a certain adjustable camera for good work, the knowledge of how to take pictures correctly, and all the equipment that is required for such a procedure. Obviously it takes considerable time, money and experience to produce such records. For the photographs which I have taken I much prefer to send the patient to a competent photographer.

We will suppose that you have taken the customary wax or compound impression of the remaining teeth before extraction. The extracted teeth can be replaced in the impression and poured up in plaster, then mounted on a straight-line articulator. This study model of the natural teeth aids materially in the selection and arrangement of the artificial teeth.

The bite impression can be taken in a minute's time, and the profile impression record that I am about to describe can be completed almost as quickly.

The profile record is of inestimable value in building out the natural contour of the face. Then, too, it is a decided help in locating the opening axis of the jaws, as well as giving the exact length of the teeth. I have been using a simplified profile measurement technic for some time, and I believe that it proves itself superior to the photographic system because it can be completed quickly and easily, it is positively strong and accurate, and it requires little material or equipment.

Fig. 1 shows the equipment used—plaster bowl and spatula, warm water and plaster previously measured, one piece of flat shoestring, and one round wooden wheel or circular sander made on a wood lathe of well dried stock seven inches in diameter and one inch thick, to which a sheet of medium coarse emery cloth cut to fit is fastened with a rubber band. A hole is bored in the center of the wheel to fit the lathe chuck. The 30-c.c. glass syringe or "plaster-gun" can be made as follows:

File and break off the needle-fitting projection, then with a small flat file make a rectangular opening in the end

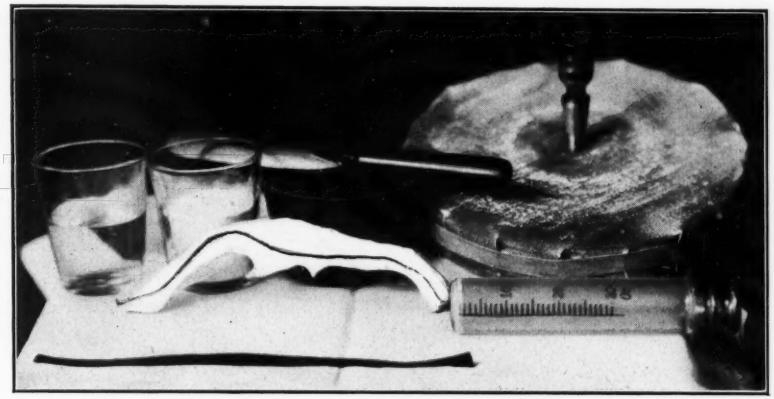


Fig. 1
Equipment necessary for making the plaster profile record.

about 1/8 inch wide and 3/4 inch long. This plaster-gun will eject a nice, even ribbon of plaster and also serve admirably in plaster check-bite technic.

The patient is reclined horizontally in the chair. The face is lightly greased from between the eyes down the median line and over the chin. The patient is instructed to close the teeth in central occlusion and to relax the lips. Before the plaster is mixed, it is well to remember that we are going to use the right side of the impression as the profile pattern, therefore the bulk of the

Fig. 2
Impression in place before extraction.

Fig. 3
Impression in place after extraction.

plaster is laid on the left side. As the finished impression is to be about an inch in width, I lay approximately ¾ inch of the plaster to the left side and the remaining ¼ to the right of the median line. This procedure obviously strengthens the impression, since it leaves but little of the right side to be sanded off when the median line of the profile pattern is reached.

The plaster is spatulated to a creamy mix, the setting of which is hastened by potassium sulphate, and applied with a spatula or ejected from the plaster-gun syringe to a thickness of about ½ inch along the greased line of the face. The shoe-string is placed on top to the left of the median line, and another layer of plaster is added to the top of this. The string reinforces and strengthens the impression against breakage. The plaster sets quickly, and before it is lifted from the face the lengths of the upper and lower teeth are marked thereon. The impression is laid aside to dry.

The circular sander is mounted on the dental lathe and will rapidly and smoothly grind the right side of the impression to the median line. The record is labeled and filed away with the bite impression. The patient is now dismissed or the extraction is commenced, as the case may be. Figs. 2-3 show the patient with the finished profile impression in place before and after the extraction of the teeth.

In comparison with other methods this plaster profile impression technic should appeal to those who extract teeth because it is so accurate, inexpensive and easily and quickly finished.

Ultra-Violet—and How?—and Why?

By W. J. RIEDEL, D.D.S., Cleveland, Ohio

Ultra-violet is a comparatively recent accessory to the dental armamentarium in the treatment of various conditions. It is so recent, in fact, that authorities contradict radically as to its application. There is still so little known scientifically of its action that there is much conjecture as to its specific reaction. Much room is left in which to theorize as to why varied results are obtained after ultra-violet exposure, but there is no questioning the fact that they do take place.

Some men regarded as authorities say that there is no penetration. Others credit the rays with a penetration of from 1.5 mm. to 4 mm. in living tissue. Some say, "Do not hold the applicator in contact with the tissue under treatment." Then an article or a lecturer states that the tissue under treatment should be exposed under light contact with the applicator or heavier contact if greater penetration is desired, due to the dehematization of the tissue by pressure.

Again we hear that the ultra-violet ray is immediately absorbed by the slightest film of blood, with no further penetration resulting. Yet the same authority will tell us that exposing the alveolus of a tooth that has just been extracted to ultra-violet from six to eight minutes, without introducing the applicator in direct contact with the wall of the socket, will prevent post-operative soreness—and it does. In spite of the fact, the presence of blood renders ultra-violet incapable of further penetration, and I have yet to see a case of ordinary extraction where there was no trace of a blood-containing exudate immediately after the removal of the tooth in question.

Is it any wonder, then, that the man who is just beginning the use of ultra-violet is in a quandary as to what or what not to do? It is my contention that the thing to do is to try the various methods, watch the results, and follow through those that your equipment produces most desirably.

I believe that ultra-violet holds the same status in dental operative requirements today that x-ray held twelve years ago. I also believe that it will not take that long for the profession to adopt it as universally as it has the x-ray.

It is really astonishing to what an extent post-operative complications can be averted or greatly minimized by the use of ultra-violet. I might, for example, cite two cases from my practice which are typical of many.

CASE I

I removed a right maxillary second molar for a lady who had been having neuralgic pains in the head for a long period. X-rays showed considerable calcification of the pulp in the pulp chamber. There resulted about two weeks of extreme pain from a dry socket. The patient returned in about four weeks with similar symptoms on the left side. X-rays showed the same condition in the left maxillary second

molar. She wanted the tooth removed, but naturally, was very apprehensive about it after her previous experience, and I could give her no encouragement. I removed the tooth, and it gave every indication of a repetition of the actions of the first offender, with all appearances apparently prophetic of dry socket. This time I directed ultra-violet rays into the socket for a period of six minutes. When dismissing the patient, I requested her to call me the following morning and inform me of her condition. The report came in, greatly to my surprise and pleasure as well as the patient's, that she had slept well and the socket had given her no discomfort.

Case II

The other case in mind was that of a woman, about 38 years old, who had had a very difficult time with septic sockets after the removal of two maxillary third molars about two years before. The teeth had been neglected since that time, making it necessary to remove two other molars. The patient was much worried and had put off the ordeal as long as possible. She was extremely nervous. The teeth were badly broken down, the pulps were vital, and a generally hypersensitive condition was present. Immediately after extraction a four-minute exposure to ultra-violet was given (two minutes less than in the other case), with blood oozing freely. The condition reported by the patient's husband the second morning following, instead of the next day as requested, was that she had slept well and was doing nicely, with very little tenderness present, notwithstanding the fact that I had used more than the usual amount of novocain solution because of the hypersensitive condition.

There are many theories extant as to why and how these conditions are so favorably influenced by ultra-violet. Whether it be activation of phosphorus, calcium metabolism, increase of hemoglobin content in the blood, bactericidal action to the depth of penetration, unknown or known, why not accept the thing as it is for the good it does? Let the investigation of why and how it does it go on at leisure, in the meantime letting it do its part in the alleviation of suffering for the patient and in easing the mind of the operator.

I have a personal theory regarding the operation of ultra-violet, one I have not heard expressed in the same way, at least. It is that ultra-violet exposure in some way stores up potential energy in the cells of the tissue so exposed, which prevents inflammatory reactions throughout the duration of the healing process, whether the tissue be blood, bone or soft tissue. Why should this not be just as tenable as the theory that vegetables store up their vitamins, and that cow's milk during the summer months, when grass and feed acquire greater ultra-violet activation by exposure to the sun or even to artificial irradiation, has been proved to be beneficial to or even capable of curing diseases resulting from lack of this activation?

10323 Superior Avenue

One Way to Secure Comfort In Full Lower Dentures When the Ridge Has Been Resorbed

By E. S. ULSAVER, D.D.S., New Rochelle, N. Y.

In cases where the ridge has been completely resorbed, the tissues of the floor of the mouth often rise above the level of the ridge and are found attached to the top of the ridge on both sides. Unless the denture is shaped to keep these attachments stretched, they will be pinched under it and will become sore.

Many efforts have been made to avoid trouble with these attachments by cutting the lingual margin of the denture back far enough to free them. This has occasionally necessitated cutting it back to the crest of the ridge. Such extensive cutting may render the denture unstable.

Another method that has sometimes been successful begins in the impression. The lingual border of the impression from bicuspids to bicuspids is trimmed by having the patient raise the tongue and project it from the mouth while the impression material is soft (Fig. 1). This prevents the impression material from going far below

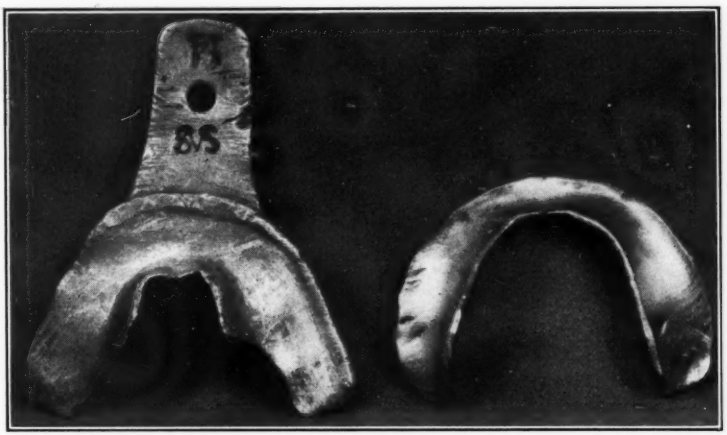


Fig. 1

On the left, the tray for the snap impression, its labial and buccal margins removed and the lingual margin cut away on both sides at the rear so that the finger can press the compound below the mylohyoid ridge.

To take an impression made in this way from the mouth, it is necessary to tip the handle of the tray a little upward and push the impression backward. It will then come away easily, but cannot be taken out with a straight forward movement because of the compound below the ridge. Perhaps a hundred people are wearing satisfactory dentures from impressions taken with this tray.

On the right, the tray shaped over the ridge of the cast from the snap impression. With it the muscle-trimmed impression is taken.

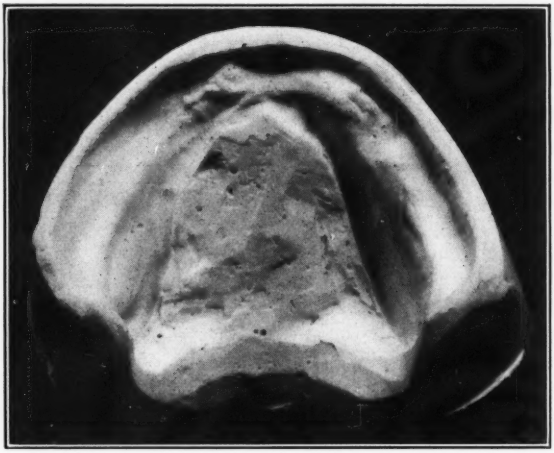


Fig. 2

The mandibular cast over which the denture illustrated in this article was made. When the mouth is examined in the usual way, the tissues of the floor rise above the ridge on both sides, especially in the posterior portion.

The impression has been carried well below the mylohyoid ridge on both sides. Strong relief has been made over that ridge by carving the impression, so that the denture cannot impinge on the ridge in lateral movements.

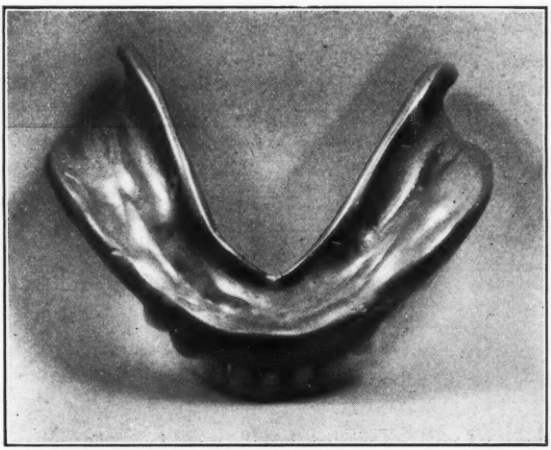


Fig. 3

The lingual border of the denture is thick and well rounded. The relief which has been made over the mylohyoid ridge on both sides gives the lingual wall of the denture a hollow look.

the mylohyoid ridge in the anterior portion of the mouth. From the bicuspids backward, on each side of the mouth, the impression material is allowed to extend well below the mylohyoid line (Fig. 2). Throughout its entire extent the lingual border of the impression should be thick and well rounded (Fig. 3).

The denture is made as wide buccally as circumstances permit in the regions of the natural first and second molars, but in the region of the third molar it must be narrow.

will not be able to bring pressure to bear on the sharp edge, even when the denture is forced laterally. Such pressure can be prevented if the denture below the ridge comes firmly against the lingual side of the mandible before it makes contact with the tissue over the ridge (Fig. 5).

When it has been possible to carry this plan into effect, it has always afforded relief, but it is often difficult to locate the exact area in which relief in the denture will afford relief to the patient. Sometimes a year of frequent

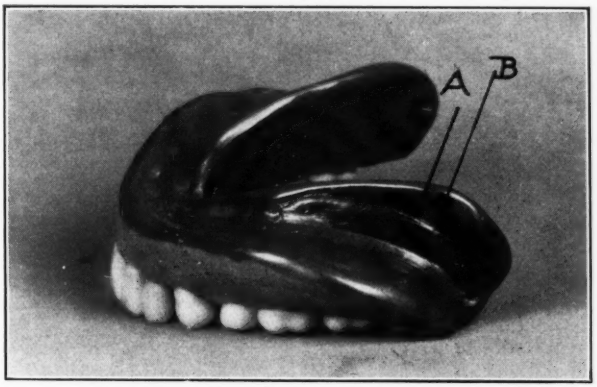


Fig. 4

The lower denture shows plainly, in this case, the imprint of the mylohyoid ridge (A).

The portion of the denture at B not only extends below that ridge, but is so shaped that when the denture is pressed laterally, B strikes against the lingual side of the mandibular wall and prevents the region at A from coming into contact with the ridge.

It is sometimes very difficult to determine where the relief here so plainly shown at A should be made, and much cooperation between patient and dentist may be necessary.

If the finger is placed on the mylohyoid ridge in the molar region, it will be found to be very sharp (Fig. 4). This sharp area should be located in the impression if possible, though this is sometimes very difficult. Where the ridge is sharp, relief over it should be made to such a depth that the denture

trials has been necessary to get the desired result, but I believe it can be secured in every case if dentist and patient will work together long enough. And when it is just right, what a source of comfort and joy it is to a patient!

A lower denture that is wide in the region of the first and second molars

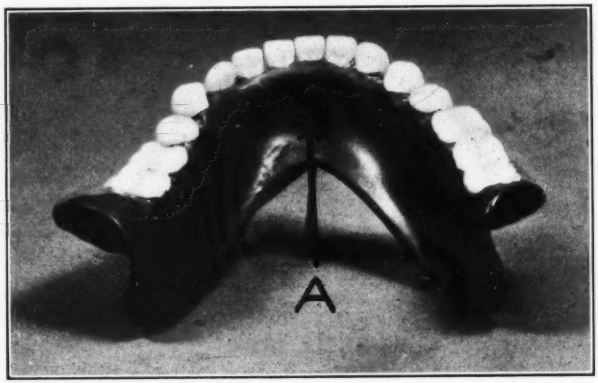


Fig. 5

The depth of the lower denture in the posterior section is clearly shown. The lingual margin has been extended inward to form a tongue-rest from second molar around to second molar. This greatly increases the stability and efficiency of the denture. At the location marked A the plate has been made very thin. Care must be taken not to drop such a denture, since it is rather easily broken at this point.

may rise and fall with every motion of the tissues, but it is always carried back to the place at which it functions. The edges of such a denture are always in contact with the tissues, and most patients can eat nuts and any other kind of food without their getting under the denture.

Professional Building

Fear—A Handicap to the Dentist

By E. G. LEIGHTON, D.D.S., Minneapolis, Minn.

It is an old and established fact that every one or at least nine hundred and ninety-nine out of every one thousand people approach the dentist with fear and trembling. "That terrible buzzer!" "Oh! Doctor, do you have to use that? If it weren't for that, I would just as soon come to the dentist often." "I can stand any kind of pain except in my teeth; they are terribly sensitive."

These words greet the dentist every hour of his working day—from husky men and strong women (as yet untouched by the reducing fad), old and young, even little tots that have never even seen a dental office before. Some one has passed the idea of *fear* along to them.

Picture the other side of this oft-repeated drama. The dentist standing ready and anxious to do his best. That tooth with the big cavity and deep decay—he knows he has to remove it, every particle, or the "bugs" that cause decay will go right on working under the filling. Yet does the patient help him in any way? Even when he suggests a local anesthetic so that there is no feeling at all in the tooth while preparing it, what happens? They are afraid of this and afraid of that. *Fear,* that bugaboo of mankind that is probably met more often by the dentist than by any one else. If that *fear* could only be thrown to the winds instead of handed down from generation to generation!

What could be more cruel than filling the minds of our little tots with *fear!* Sometimes it is thoughtless talk or exaggeration by parents or others. Other times it is suggested by our very attitudes. The mother (often accompanied by the grandmother) comes in with the little child. What is their attitude? They immediately start telling the little one, "This man won't hurt you—he is a nice man." What has happened already? The *fear-thought* nicely planted in the child's mind the first thing. Then mother and grandmother stand around the dental chair. Listen to their conversation. "Mother will buy you some nice candy if you are a good girl." "Oh! Mary is a big girl now. She never cries."

They are all placing the dentist in a pretty poor place to start work on the child. If parents would adopt a different attitude, the child would not be burdened with that awful *fear.*

Start the visits to the dentist at two and a half or three years of age. He will let the child sit in the chair, show him how it rides up and down (like an elevator), possibly even rinse his mouth with a nice-tasting mouth-wash. The next time the tiny patient comes he feels more or less acquainted with his otherwise strange surroundings. This time probably the dentist will clean the little teeth. Everything is fine and the child will want to drop in to see his friend when he is near the office again. By these frequent visits it is easy to detect the first sign of decay or trouble of any kind. The child has been properly handled and educated to

the point where he thinks nothing of sitting in the dental chair. Small cavities just starting are easy to take care of. As a consequence, the child's mouth is in a healthy condition. He has never acquired that *fear* that is such a handicap, and he is ready to face life with a clean, healthy mouth not burdened by the ills that come from infected, abscessed and decayed teeth and gums.

207 Masonic Temple.

Society for the Advancement of General Anesthesia In Dentistry

On November 18, 1929, permanent organization was effected of the Society for the Advancement of General Anesthesia in Dentistry at the office of M. Hillel Feldman, D.D.S., 730 Fifth Avenue, New York, N. Y.

The officers elected were James T. Gwathmey, M.D., 30 West 59th Street, New York, N. Y., Honorary President; M. Hillel Feldman, D.D.S., President; James T. Ivory, D.D.S., Staten Island, New York, Vice-President; and Leonard Morvay, D.D.S., 76 Clinton Avenue, Newark, N. J., Secretary.

The purposes of the Society as set forth in the Constitution preamble are:

"Whereas the utilization of General Anesthesia in Dentistry has been neglected for a number of years, and whereas this has deprived our patients of an agent of inestimable benefit for operations in the mouth, therefore be it resolved that we, a body of general practitioners, organize to foster this purpose.

"The object of this society shall be to promote knowledge of General Anesthesia in Dentistry among general dental practitioners and to stimulate research along this line."

As such, it is the only organization of its kind in the world. General anesthesia societies are usually in the interest of specialists in anesthesia.

It is planned to hold quarterly meetings. A dinner for the entire Society will precede each meeting. The next session is called for February 17, 1930.

The Society pledges itself to abide by the Code of Ethics of the American Dental Association. Special mention was made in the Constitution adopted of the pledge of the members not to tolerate the division of fees between general practitioners and specialists in any form.

LEONARD MORVAY, D.D.S., *Secretary,*
76 Clinton Ave., Newark, N. J.

Toothach

Editor, The Dental Digest:

The following was taken from a book called *Buchan's Family Physician* and was used sometime between the years 1700 and 1800. The title page had been torn out and therefore I am unable to give the correct date of its publication.

The original spelling, punctuation and structure are copied exactly. The letter *s* in the book of course follows the usage of *f* then practiced.

Henry L. Weigel, D.D.S., York, Pa.

This disease is so well known, that it needs no description. It has great affinity with rheumatism, and often succeeds pains of the shoulders and other joints.

It may proceed from various causes; as obstructed perspiration, or catching cold; or from any of the common causes of inflammation. I have often known the toothach occasioned by neglecting some part of the usual coverings of the head, by sitting with the head bare near an open window, or its being anyhow exposed to a draught of cold air. Food or drink taken either too hot or cold, is very hurtful to the teeth. Great quantities of sugar, or other sweet-meats, are likewise hurtful. Nothing is more destructive to the teeth than cracking nuts, or chewing any kind of hard substances. Picking the teeth with pins, needles, or with anything that may hurt the enamel with which they are covered, does great mischief, as the tooth is sure to be spoilt whenever the air gets into it. Pregnant women are very subject to the toothach, especially during the first three or four months of pregnancy. The toothach often proceeds from scorbutic humours affecting the gums. In this case the teeth are sometimes wasted, and fall out without any considerable degree of pain. The proximate or immediate cause of the toothach is a rotten or carious tooth.

In order to relieve the toothach, we must endeavor to draw off or divert the humours from the part affected. This may be done by mild purgatives, bleeding, and bathing the feet frequently in warm water. The perspiration ought likewise to be promoted, by drinking freely of weak wine whey, or other diluting liquors, with small doses of nitre. Vomits too have often an exceeding good effect in the toothach. It is seldom safe to administer opiates, or any kind of heating medicines, or even to draw a tooth till proper evacuations have been premised, and these alone will often effect the cure.

Next to evacuations we recommend fomenting the part with warm water, or decoctions of emollient vegetables. Bags filled with boiled camomile flowers, flowers of elder, or the like, may be applied to the part affected, with as great a degree of warmth as the patient can bear, and renewed as they grow cool. The patient may likewise receive the steams of warm water into the mouth, through an inverted funnel, or by holding the head over the mouth of a porringer filled with warm water, etc.

Gargles are likewise of use to make a discharge from the part. Rob of elder dissolved in small beer makes a very proper gargle, or an infusion of sage or mulberry leaves.

Such things as promote the discharge

of saliva, or cause the patient to spit, are always proper. For this purpose, bitter, hot, or pungent vegetables may be chewed; as gentian, calamus aromaticus, or pellatory of Spain. Allen recommends the root of yellow water flower-de-luce in this case. The root may either be rubbed upon the tooth or chewed. Brooks says, he hardly ever knew it to fail to ease the toothach.

Many other roots, herbs, and seeds, etc. are recommended for curing the toothach; as the leaves or roots of millefoil or yarrow chewed, tobacco smoked or chewed, or the ashes put into the hollow tooth, staves acre, or the seeds of mustard chewed, etc. These bitter, hot, and pungent things, by occasioning a great flow of saliva, frequently give ease in the toothach.

Opiates often relieve the toothach. For this purpose a little cotton wet with laudinum may be held between the teeth; or a piece of sticking plaster, about the bigness of a sixpence, with a bit of opium in the middle of it, of a size not to prevent the sticking of the other, may be laid on the temporal artery where the pulsation is most sensible. De la Motte affirms, that there are few cases wherein this will not give relief. If there be a hollow tooth, a small pill made of equal quantities of camphire and opium, put into the hollow, is often beneficial. When this cannot be had, the hollow tooth may be filled with gum mastich, wax, lead, or any substance that will stick in it, and keep the external air out.

Few applications give more relief in the toothach than blistering plasters. These may be applied betwixt the shoulders, but they have the best effect when put behind the ears, and made so large as to cover a part of the lower jaw. Burning the nerve within the affected tooth with a hot iron, has frequently given ease; but this operation ought to be done with care. Applying a hot iron to the antetragus, or what is called the inner bar of the ear, is likewise a noted cure for the toothach. Blistering is more safe than either of these, and is not less efficacious.

Hoffman says, when everything else failed, that he had often great success from the following pills.

Take of aromatic pill one dram, storax pill half a dram, extract of saffron six grains. Make them into nine pills; of which six or eight are to be taken at bedtime for a dose.

After all, when a tooth is carious, it is often impossible to remove the pain, without drawing the tooth; and as a spoilt tooth never becomes sound again, it is prudent to draw it soon, lest it should affect the rest. Tooth drawing, like bleeding, is very much practiced by mechanics as well as persons of the medical profession. The operation however is not without danger, and ought always to be done with care. A person unacquainted with the structure of the parts, will be in danger of breaking the jaw-bone, or of drawing a sound tooth instead of a rotten one.

When a sound tooth has been drawn, if it be replaced immediately, it will grow in again. It is now a common practice to draw a rotten tooth, and put a sound one, taken from the mouth of another person, in its place. It is likewise an easy matter to fix artificial teeth so neatly, as to answer most of the purposes of the natural; but these are matters which do not fall under our consideration.

When the toothach returns periodically, and the pain chiefly affects the gums, it may be cured by the bark.

Some pretend to have found great benefit in the toothach from the application of an artificial magnet to the affected tooth. We shall not attempt to account for its mode of operation; but, if it be found to answer, though only in particular cases, it certainly deserves a trial, as it is attended with no expense, and cannot do any harm.

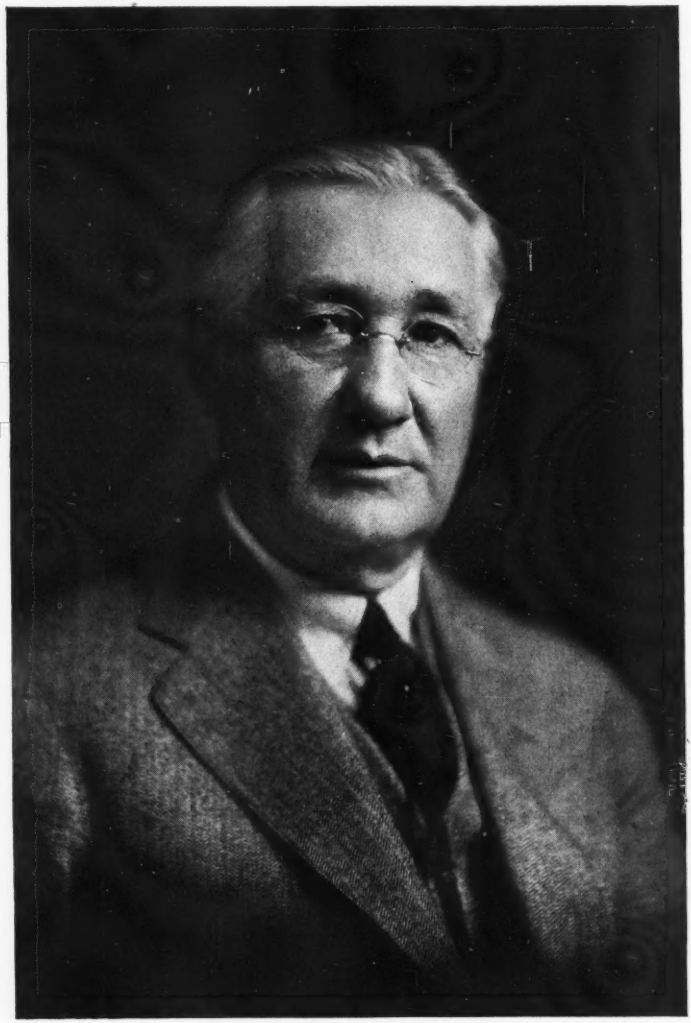
Persons who have returns of the toothach at certain seasons, as spring and autumn, might often prevent it by taking a dose of physic at these times.

Keeping the teeth clean has no doubt a tendency to prevent the toothach. The best method of doing this is to wash them daily with salt and water, or with cold water alone. All brushing and scrubing of the teeth is dangerous, and, unless it be performed with great care, must do mischief.

[A CAUSE OF FAILURE]

A large percentage of pulpless teeth become infected because the operation is not properly done, and not because of the impossibility of doing the work properly, and it seems to me that an effort should be made to correct this situation.

—Grove.



LAFAYETTE L. BARBER, D.D.S., F.A.C.D.

Lafayette L. Barber, D.D.S., F.A.C.D.

On November 23, 1929, Dr. Lafayette L. Barber died from a heart attack while attending a football game. He was seventy years old and had practiced in Toledo, Ohio, for forty-five years.

He was born in Rochester, Ohio, and graduated from the University of Michigan, School of Dentistry, in 1885. He was a Fellow of the American College of Dentists and an ex-President of the Toledo Dental Society, the Ohio State Dental Society and the Northern Ohio Dental Society.

He was in active practice and had been at work in his office on the morning of the day he died. His loss will be greatly felt throughout the profession.

Death of I. H. Hettinger

The dental trade was shocked to learn of the death Monday, November 25, 1929, of Isaac H. Hettinger, Chairman of the Board of the Patterson-Hettinger Co.

Mr. Hettinger was born in Pennsylvania in 1863, and located in Wichita, Kansas, in 1885, where two years later, he founded the business that later came to be known as Hettinger Bros. Mfg. Co. In 1897, with his brother Howard, he moved to Kansas City, where another brother, Calvin, joined them.

As their business grew, branches were opened in Oklahoma City, St. Louis, Tulsa and Peoria.

Last year his company united with the M. F. Patterson Co. of St. Paul, forming the largest dental supply firm in the United States, with more than twenty branches west of the Mississippi.

For eleven years he was president of the American Dental Trade Association. Interment was at his old home at Sinking Spring, Pennsylvania.

Edwin Tyler Darby, D.D.S.

Just as the magazine goes to press, we learn of the death of Edwin Tyler Darby, D.D.S. This news will come as a shock to some thousands of dentists throughout the world, for few indeed are they in our profession who are more widely known or better loved.

At the time of his death Dr. Darby was Emeritus Professor of Operative Dentistry at the University of Pennsylvania.—G. W. C.

DIGESTS

BROKEN NEEDLES FOLLOWING MANDIBULAR INJECTIONS

By George M. Dorrance, M.D.

The breaking of needles is a common occurrence, but according to the author it is not caused so often by carelessness as is usually supposed. Very frequently there is a history of a sudden movement by the patient due either to nervousness or to pain caused by the piercing of the inferior dental nerve. The attempt to change the direction of the needle while the point is engaged in the periosteum or dense fibrous tissue may break the needle.

Another possible factor may be the sudden contraction of the internal pterygoid muscles stimulated by the infiltration, the fascia being rigid and acting as a fulcrum. This muscle is one of the strongest in the body and is quite capable of breaking the needle.

No removal should be attempted without adequate x-rays, and these should show the exact position of the needle. General anesthesia is to be preferred to local, since complete relaxation of the parts is desirable, and also because novocain distends the tissues.—*The Dental Cosmos,* November, 1929.

THE RELATION OF DENTAL SEPSIS TO GASTRO-INTESTINAL DISORDERS

By Meyer Golob, M.D.

The author stresses the fact that prophylactic dentistry is an important part of preventive medicine, and that this relation of oral health to general health is well established. Very often, when no attention has been paid to oral sepsis, the removal of remote lesions will give only temporary and symptomatic relief. Consequently the correction of dental sepsis should be a routine pre-operative measure.

The dentist must view his patient as a whole and not merely confine himself to oral conditions, for metabolic disturbances may cause a great deal of trouble in the mouth.

Spastic disturbances in the gastro-intestinal tract frequently disappear when dental foci of infection have been eradicated. These foci of infection may cause various lesions in remote organs of the body.—*The Dental Outlook,* November, 1929.

THE TRAINING OF DENTAL TECHNICIANS

By Henry L. Banzhaf, B.S., D.D.S., F.A.C.D.

The relation between the dental technician and the dentist is most valuable, and the working efficiency of the average dentist would be greatly decreased unless this relationship were maintained.

In large successful laboratories each mechanic is a specialist and attains his proficiency only after a period of from five to eight years. The courses offered by proprietary schools are unsatisfac-

tory and in many instances hold out inducements to the prospective student that cannot be fulfilled. Since the War three recognized dental schools have given courses for dental technicians, but these have been abandoned.

The dental technician does not work for the public but for the dentist, and the latter is responsible for the health of the patient. Consequently there is no need to license the technician. For the same reason there is no necessity to license the dental laboratory, unless it is with the object of restricting the field. Any laboratory that does not employ skilled workers and furnish satisfactory appliances to the dentist will be eliminated by competition.—*The Journal of the American Dental Association,* November, 1929.

Foreign Dental Literature

Edited by JOHN JACOB POSNER, LL.B., D.D.S., New York, N. Y.

RESECTION OF THE MANDIBLE IN MALIGNANT TUMORS

By PROF. HANS PICHLER, Vienna

It is the opinion of the author that many patients with malignant growths suffer great harm in an attempt to deal with this condition at first through the use of radium or x-ray. If the physician prescribes the most appropriate treatment, which is an operation, the patient inquires whether there is anything else that might be done to avoid the knife. The physician then says, "Yes, there is radium and the x-ray." Naturally this latter becomes the patient's choice. It is time the physician put his foot down firmly and definitely and insisted on an early operation.

Surgical treatment in the early stages exceeds by far any other means of combating cancer. It has been known from earliest times that the sooner the surgery is instituted, the better is the prognosis.

Most authors believe in using x-ray treatment in conjunction with or following surgery. This is to destroy any cancer cells which were of necessity left behind or to eradicate those bits of cancerous tissue which might have been overlooked.

Where bone is involved due to cancer, the treatment is much more difficult. If, however, the diseased bone is first removed, it renders more effective the action of rays or irradiation.

Irradiation often leads more or less to injury of the soft tissues, especially those of the skin. It causes the wound to open subsequently with necrosis of the flap and other post-operative difficulties.

It is typical of such cases that the wound heals, and that after the sutures are removed the wound reopens. This is due to proliferation of the epithelial cells in the young scar tissue. It has been frequently the experience of the author, particularly in resections of the superior maxilla, that the wounds have reopened where irradiation had been previously employed.

It is useless to try to suture these

cases again immediately. It is best to wait until the tissue recovers its tone, and even then the repair may demand a plastic operation. The best results are to be had with a combination of surgery and prosthetic restoration.

In malignant jaw growths it is wrong to depend on irradiation. Either the tumor does not react to the helpful action of the rays or, if it should disappear, it will subsequently reappear. At any rate, much valuable time has been lost, and the injury to the tissue through irradiation cuts down the possibility of successful surgery.

Necrosis of bone and soft tissue through ray treatment is slow-healing and productive of neuralgic pains. It is true that all this may happen in post-operative irradiation, but it is not so severe. If during the operation it is seen that the growth cannot be removed with chisel and knife, electrocoagulation may be used. This with irradiation improves the condition. The prognosis in tumor of the mandible is not so good as that of the maxilla.

Operable cases depend on five factors:

(1) Heart and lungs.

(2) Extension of the cancer toward the brain.

(3) Extension toward the epiglottis and brain.

(4) Invasion of the skin.

(5) Extension of the disease in the lymphatics.

Of course the general health of the patient is important. In old age arteriosclerosis and chronic bronchitis make the risk bad. These patients often do well under conduction anesthesia.

If the patient has great pain and the growth will not react to irradiation so that the only hope lies in an operation, the surgeon is really pronouncing a sentence of death when he refuses to operate. This is especially deplorable when the patient has set his heart and hopes on an operation. This psychic element deserves consideration.

The extension of the cancer along the jaw is not discouraging, for it is possible to replace an entire mandible by prosthetic means. There is no doubt, according to Dr. Pichler, that both maxilla and mandible could be replaced should the occasion arise, although he has not seen a case of such magnitude.

In the maxilla the limit of operability is the base of the brain, although in some cases the dura mater has been exposed. Even here, with careful surgery and cautious irradiation, the patient has been given a new lease on life.

A large involvement of the tongue, jaws and larynx is unfavorable. Involvement of the neck lymphatics may exist without making the case inoperable. It is also possible to remove all arteries and nerves on one side without doing any great harm, as is necessary where the carotid artery is strongly pressed or obliterated by the tumor. The skin plays an important part, as it is necessary for plastic surgery in covering the parts lost by extensive surgery. — *Die Fortschritte der Zahnheilkunde,* November, 1929.

FRACTURE OF THE MANDIBLE

By Prof. Dr. Hans Moral and Dr. Hans Schlampp, Rostock, Germany

Causes of fracture of the mandible vary according to locality. Farm lands,

automobile factories, manufacturing centers, all contribute their quota of accidental injuries resulting in fracture. More recently boxing and automobile accidents have increased the total of fracture cases seen. The author quotes Ivy of Philadelphia, who gives 49 fractures out of 100 as occasioned by a blow of the fist. Fourteen per cent are due to falls, 8 per cent to automobile accidents, and 5 per cent to fracture in tooth extraction. Fracture of the mandible occurs ten times as frequently as in the maxilla.

It is astonishing how seldom fracture of the jaw in women is reported. The author has seen but one case in three years.

Statistics show that the number of fractures each year is on the increase. For boxing there should be worn between the teeth a soft vulcanized rubber splint. This takes up the shock of the blow and prevents the teeth from striking together. Usually a surgeon is called in to treat these cases of fracture, whereas a dentist would be more suitable. It must be remembered that if a fracture has caused an injury of the lip or cheek which pierces both, the mucous membrane of the mouth should be sewed up first. These cases should be handled as quickly as possible, since early treatment favors success. In the systematic examination of the patient presenting with fracture the following points should be noted:

(1) General appearance.

(2) Color of skin.

(3) Whether or not the patient is in a serious condition.

(4) Whether the fracture is simple or complicated by injury to soft tissues.

(5) Examination of circulation of heart.

(6) Examination of eyes, ears, nose and abdomen.

(7) Inspection of the jaw.

The last thing is the inspection of the jaw, and all other details should be seen to at the beginning.

Where the wound is susceptible to infection through dirt, tetanus antitoxin should be given. In addition to dust and dirt and earth, infection may arise through unclean fingers or through an unclean cloth used in first aid. These cases should have antitoxin treatment.

If the patient comes to the clinic within a few hours of the accident, do not attempt to make intra-oral fixation, but use only external bandages. Dislocation should be reduced at once. The jaw should be held with bandages.

For simple cases intermaxillary fixation can be obtained with ordinary brass ligature wires. The wires are twisted about the necks of opposing teeth and then both free ends are twisted together.

The author does not approve the replantation of teeth which have been knocked out as a result of the blow causing the fracture. Teeth in line with the fracture should be removed at once. A case is cited which remained unhealed after several months, but which readily responded when a tooth in direct line with the fracture was extracted.

Half-round wire has been discarded in favor of round wire for making arches for the reduction of fractures. In young folks fractures heal rapidly, and one case of a severe fracture in a nine-year-old child healed in two weeks. Six weeks is the usual healing time where there are no complications.

Occasionally there is a period of anesthesia following fracture. This is due to hematoma or a blood clot pressing on the mandibular nerve. Sometimes the persisting anesthesia is occasioned by the nerve itself, which has been crushed. — *Die Fortschritte der Zahnheilkunde,* November, 1929.

SEPTICEMIA OF BUCCO-DENTAL ORIGIN

A Report from the Sixth Congress of Stomatology, Paris

By Drs. Thibault and Raison

The physician should recognize mouth infection as a frequent cause of septicemia similar to septicemia of other origin, determined like others by local multiplication of microbes, elevation of virulence or diminution in general resistance, and differing only in the means of bacterial invasion.

The physician should not consider the relation between a focus of chronic dental infection and certain disease at a distance as mere theory. It is a recognized factor well supported by the evidence.

The Americans have devoted themselves to the problem and hope to obtain important testimony bearing upon the relation of buccal infection and certain organic conditions.

The systematic study of chronic infections of which the origin is still obscure should be profitable, especially if it is conducted by physicians, dentists and bacteriologists working in unison.

The importance of septic buccal infection should not be compared with that of syphilis or tuberculosis. We must not forget that the mouth is only one focus of infection, and that certain among the others have developed secondary foci because of primary septicemia elsewhere. The digestive tract must not be overlooked.

The specialist should give anti-infectious treatment and should do so in time to prevent general infection. He should not occupy himself merely with the restoration of the teeth, but should avoid injury through infection. His care embraces the protection of the pulp and the elimination of pyorrheal infection, often neglected and often the source of certain general intoxication.

The specialist should hereafter recognize his duty to safeguard the health of his patient. If he finds pyorrheal conditions and dental granuloma, it would be judicious to refer him to his family physician to be sure that the patient does not suffer from a distant infection.

A study of septicemia of bucco-dental origin more than any other shows the necessity of extending medical knowledge to embrace the value of the dental art.—*La Revue de Stomatologie,* September, 1929.

SURGICAL TREATMENT OF APICAL INFECTIONS

By Dr. G. Lacronique, France

The surgical treatment of periapical areas is in both origin and spirit purely French and a product of French dentistry. It is born of the frequent failure in root-canal work as a result of the inability in many instances to sterilize the canal or the periapical area.

The indications for surgical treatment are clinical and radiographic. The

most important reason for a root amputation is to save a tooth for further use in a patient of middle age and in good health, and where it is impossible to clear up the infection present through ordinary channels.

Teeth selected for root amputation must be sufficiently firm so that following the operation there will be no interference with the normal masticating function. In one to three weeks the tooth with amputated apex should again be normal and after two or three months it should be able to act as a support for a prosthetic appliance.

All periapical lesions are amenable to root amputation. The complications present may be a lateral root abscess, proximity of the nasal fossæ or the antrum, and a fractured root apex. The root may be greatly twisted and the root canal inaccessible. A foreign particle may be present in the canal, which would interfere with proper root-filling.

The operation of root amputation is usually confined to single-rooted teeth and, at times, to the bicuspids. Local anesthesia is the method of choice under which the surgery is to be performed. The operation consists in suppressing the cause of infection within the root and the cleansing and curettage of the periapical area.

The infected process is curetted and in some cases it is not necessary to amputate the apex. The root is filled after the canal has been rendered thoroughly aseptic, and the best time to do this is during the course of the operation. It is inadvisable to fill the canal before the operation or after the apex has been removed. If the canal is filled at some time previous to the operation, there may develop acute symptoms between the filling and before the patient appears for operation.

The post-operative results are usually satisfactory, as the wound heals by first intention, and cicatrization is complete in a short time. Clinically the tooth is healed and soon is able to function normally. The cure is evidenced by the new bone formation, which shows complete regeneration in six to ten months. The radiograph shows that not merely does new bone appear, but the portion of removed root has also been replaced with bone.

Failures in root amputation follow insufficient curettage with failure to remove the infectious material at the apex. The apex may have been poorly or incompletely removed and in some cases it is unknowingly left behind in the bone cavity. If the root-canal work has not been properly carried out, reinfection will follow. If the root amputation has robbed the tooth of too much structure, it will not have sufficient support to hold its position in the arch. Sometimes there is not enough bony retention at the outset to warrant the operation itself. This means failure. And if the case has been done without due regard to asepsis, the end-result will not be favorable. — *La Revue de Stomatologie,* October, 1929.

DENTAL ECONOMICS

Dental Economics—A Common Problem

By S. J. HORN, New York, N. Y.

All human endeavor can be divided into three classes. In the first we have the minister of the Gospel, the scientist, the inventor, the explorer, the missionary, the starving poet, and all others engaged in purely spiritual effort whose endeavor in their respective calling is actuated by an intense love for it rather than its monetary return. The second group embraces all of those practical souls who, like our prehistoric ancestors, concentrate all their energies and efforts for the gratification of their physical wants. The manufacturer, the jobber, the retail merchant and all others seeking purely material results, buying at a price and selling at a profit, are included in this group. The third is a sort of a combination of the former two, that is, spiritual as well as material in texture. Under this heading we may list the teacher, the writer, the architect, the engineer and the professional healer.

Dentistry, being of the healing art, is both spiritual and material in aspect. Preventing and curing disease is purely spiritual, but getting paid for it, which enables the dental practitioner to keep himself and those dependent upon him in decency and comfort, is the material phase of his calling.

When a young man conditioned to a purely material environment such as manufacturing, etc., decides to establish himself in a business of his own, it may be readily assumed that he has served his apprenticeship in that business in one form or another. It may have been in the capacity of an executive in the office, a clerk behind the counter, or a foreman in the workshop, but, whichever it was, he has had ample opportunity to acquaint himself with cost and overhead expense, credits and collections, profit and loss, and he also has a general knowledge of every department in that business.

When a young man graduates from dental college, all he has acquired is a foundation of technic which is to serve as a basis for further study and research work. His knowledge of the professional side of dentistry is quite limited, and his knowledge of the business side, that is, its material phase, as outlined above, is absolutely nil. At no time throughout the many years he has spent in college have his instructors and professors given him the least inkling of the many pitfalls that await him as a dental practitioner. Perhaps that is as it should be, but, judged from the general economic condition of the dental practitioners throughout the country, the results have certainly been far from satisfactory. The young graduate, callow, unsophisticated and

unguided, immediately after hanging out his shingle adopts the policy of safety first. His fees are not based upon the merit of his service or his needs as a human being, but primarily upon what he can get with the least amount of risk of losing his patient. And the older practitioners—do they lend him a hand in a pure spirit of comradeship and guide him across the chasms, dangerous precipices and huge obstacles which they themselves have in their many years overcome? Yes—only inasmuch as the technic of their chosen profession is concerned! They will readily impart to him all of their knowledge on the preparation of a cavity or the construction of a denture or the filling of a root canal, but they will assume a stubborn silence with regard to the fees they charge their patients for such service or their method of procedure in obtaining them. The reason for this somewhat antithetic attitude on the part of the older practitioner toward his embryonic colleague lends itself to a ready analysis.

In the last decade dentistry as a profession has made remarkable strides. Clinics, lectures, postgraduate courses and conventions are largely attended by many practitioners all over the country, with the result that the average dentist of today is far more capable of rendering valuable scientific service to his patients than was the dentist of ten years ago, and yet, in spite of all this remarkable progress, economically he has practically stood still. His net income is no greater today than it was ten years ago. In other words, the general public has not kept pace in the appreciation of his service with his increased knowledge of it, and the average income is still $2,500 per annum. The reason for this deplorable state is that, whereas the technic of dentistry and its many problems have been considered a common problem of all practitioners, yet each dentist looks upon the economic problem of dentistry as his own private affair. Naturally, where there is no common problem, there is no common understanding, no mutual sympathy, and consequently no combined concentrated effort for the remedying of an existing evil.

Is the problem of dental economics a common problem? We are selling a professional service, and, as such, what is the attitude of the public toward it? We cannot possibly sell anything intelligently unless we first ascertain the exact attitude of the prospective purchaser toward the thing we are trying to sell. We know, for instance, that the attitude toward an automobile is luxury, comfort, pride of possession, etc., so that if I were to try to sell an automobile, I should naturally appeal to all the fastidious tastes of the prospective purchasers, pointing out that my particular car can satisfy them. Now, then, what is the attitude of the public toward dentistry? There are three elements that enter into the selling of anything, be it an article or a professional service: (1) the desirability of the article, (2) its need, and (3) the sacrifice, or the price. We can readily assume that the possession of an automobile is desirable. Of course, if we cannot afford it, we manage to get along without it, but the fact remains, nevertheless, that very few people have no desire to own an automobile. The need for an automobile can readily be established. With our mod-

ern congested transportation facilities, with the green grass getting farther and farther away from our places of habitation, with the desires of our wives and youngsters to go to places to see things, the need for a car can be very readily established. As to the sacrifice or price—that is pretty concrete. For instance, when I go to purchase a car and I am told that the price is $1,000, I am not a bit shocked. I know that that is the price. In fact, I anticipated it. I have probably included it in my budget and have saved toward it methodically for many months. How about dentistry?

To begin with, dentistry as an article is not desirable. At best it is a necessary evil. This is readily evidenced by the deep sigh of despair with which the patient finally submits himself to the tender mercies of the dental practitioner. The need for dentistry is something that it is very difficult to establish. When a patient visits the dentist because one tooth is painful, it is difficult for him to believe the story that the pain in this one tooth is the first manifestation that the time has at last come when he is about to pay the price for eight or ten years' neglect, that the pain in this one tooth which bothers him at the present is the most insignificant part of the pathological condition which a mouth mirror, explorer and x-ray diagnosis have revealed to the dentist; in fact, that not only will this tooth have to come out, but that three or four others on the other side also will have to come out to be replaced by bridges, etc. Dentistry to the layman is quite an abstract subject. It is intangible or much less tangible than the automobile which he has seen, probably driven, and to which the whole family is anxiously looking forward. Your story, truthful though it is, is very difficult for him to embrace, at least at the first telling, and the price or sacrifice—what was his concept when he decided to go to the dentist because of an aching tooth? Extraction, relief, $2.00-$5.00, perhaps $10.00, if he is exceptionally broad-minded—and then you suddenly quote him a figure for work running up into telephone numbers. To say the least, it is shocking! What is the result? Only 10% of our vast population visit dental offices. The other 90% go there only in case of a serious toothache or some other similar emergency.

Is the education of 90% of our population to the gospel of oral hygiene and dental prophylaxis a common problem? Obviously it is. There are numerous other instances which may be cited to prove conclusively that the problem of dental economics is a common problem, but the one stated above is sufficient for the present, and, just to put a sort of period to this important question, let me point out the psychological underlying principles that affect the attitude of the public toward people engaged in a particular endeavor by the group personality which their behavior establishes.

Whatever sins are committed by any one individual engaged in a particular endeavor are readily attributed to all others engaged in the same endeavor. If a lawyer fails to pay a just bill, as far as the creditor is concerned, all other lawyers are dead-beats and unworthy of trust. If a suit of clothes is guaranteed against shrinkage and the first time out in the rain proves to the contrary, then all clothiers are looked

upon askance by the unfortunate victim. If a patient walks into a dental office and, upon examining the mouth, the first thing the dentist says is, "Who put this junk in your mouth?" then not only this dentist, not only the former dentist, but all dentists immediately topple from the professional pedestal.

The age when each man was a master unto himself is long past. Life is too complex, too intense, too paradoxical. We are dependent creatures, dependent upon one another for our comfort, for our happiness through social, domestic or professional intercourse. We have reached a stage where individually we are nothing more nor less than just a mere incident in planetary evolution. Only collectively, by combined harmonious effort toward our ultimate goal, can we differ from our prehistoric ancestors, whose philosophy was, "Each man to his own limb, and heaven pity the poor laggard left on the ground!"

If you find your colleague across the street cutting the capers of a buffoon in order to attract attention, don't laugh at him! The joke is on you as much as it is on him.

220 West 42nd Street.

The Dentist's Obligation to the Dental Salesman

By CARLETON CLEVELAND, D.D.S., Highland Park, Ill.

Not long ago an editorial appearing in the *Cleveland Times* contained this paragraph:

"Salesmen perform a necessary service. Those who treat them discourteously or fail to give them a moment's hearing are fair neither to the salesmen and their employers nor to themselves."

How true a statement this is, not only in its application to merchants but also as it applies to the professional man! In the field of dentistry, for instance, the dental salesman occupies an economic position, supplying a much needed service.

In the commercial world the salesman is welcomed. Merchants even go so far as to advertise that they desire salesmen to call and promise that a hearing will be given.

The dental salesman, aside from the fact that he makes much easier the purchasing problem of the dentist, frequently calls attention to new ideas and developments of which the busy dentist may not be aware. That the salesman is in a position to know what is new and valuable can easily be seen when one stops to realize that the alert and progressive salesman learns much regarding the problems of the dentist from the sales manager of the firm he represents, from the various dental practitioners with whom he comes in contact, and from other men selling to the dental profession.

In calling attention to the fact that salesmen coming to the office should be given a hearing I am not unmindful of the fact that occasionally salesmen "blow in" at the most inopportune time.

When such is the case, a few courteous words spoken in a kindly tone will be sufficient to explain the matter satisfactorily. A plan such as this is far better than a gruff, discourteous "No" or "Can't be bothered." The well trained salesman understands the conditions and is quick to grasp the situation. As a matter of fact, salesmen do not expect to make a sale at every office. The salesman who thinks that each call is going to result in a sale starts out with the wrong idea and will meet with many disappointments. The man who is working to build up a business of repeat orders cannot afford to make a pest of himself. He knows this and therefore will gladly retire when courteously told that the dentist is too busy to see him. But he will come again—and he cannot be criticized for this, for he has a service to sell and unless he makes his rounds he cannot serve the profession.

There are of course door-to-door and office-to-office salesmen who sell all sorts of gimcracks and commodities in no way connected with the work of the dentist. These, too, are entitled to courtesy, but sometimes firmness must be added thereto. But the salesman who comes representing a dental manufacturer, a dental supply house or possibly some publisher of dental books is the one who can be of great help to the busy practitioner of dentistry. He carries with him only that which is directly related to the work and interests of the dental profession. As a rule, the dental salesman has a definite understanding of the problems of the dentist and is considerate of his time.

The manufacturers and distributors of dental equipment and supplies have played a very important though somewhat silent rôle in the history and development of modern dentistry. Willingly and unceasingly has the dental manufacturer labored to perfect equipment, instruments and the materials with which the dentist may repair dental defects and restore to usefulness teeth that otherwise would remain sources of pain and annoyance to the sufferer. Likewise the dental supply dealer has been found helpful by granting suitable terms of credit and many times has been willing to extend the agreed-upon terms when some unforeseen occurrence has arisen to make immediate payment an impossibility.

The dental salesman, plodding his weary way from one office to another and bringing a pleasant smile and cheery greeting of "Hello, Doctor, what do you need today?" has saved the busy dentist many hours of time by making easier the purchase of dental supplies.

The maintaining of a sales force in order to reach and interest prospective buyers of a firm's products is somewhat costly. Much of the salesman's time is lost each day in traveling from place to place. Time is also spent in waiting to see a prospect or customer, which many times results merely in "Nothing today." This expense of wasted time is generally considered when determining the selling price of an article. It is therefore to the advantage of each individual dentist to do his part toward eliminating the waste-time element for the salesmen who call upon him. Many times an advance in the price of an article is due directly to this waste in the time element. The dentist who is

considerate of the time of the salesman calling upon him not only is observing the golden rule but is performing an economic service that will have a favorable effect upon the salesman, the firm the salesman represents, and himself as well.

The dental practitioner who keeps the door shut against all salesmen or is inconsiderate of their time obviously is doing that which works against his own enlightenment and profit. The wise man, on the other hand, recognizes the fact that these selesmen are not intruders, but are necessary factors in the make-up of the dental profession, and he will therefore give them the attention and courtesy they deserve.

708 West Park Avenue.

PRACTICAL HINTS

THIS DEPARTMENT IS NOW BEING CONDUCTED FROM THE OFFICE OF THE DENTAL DIGEST. TO AVOID UNNECESSARY DELAYS, HINTS, QUESTIONS AND ANSWERS SHOULD BE ADDRESSED TO EDITOR PRACTICAL HINTS, THE DENTAL DIGEST, 220 WEST 42D STREET, NEW YORK, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

Editor, Practical Hints:

Can you inform me about an appliance that can be made for a boxer in order to protect the jaws and teeth when boxing? The patient is wearing an upper denture. I should like to have the full technic for such an appliance.

M. L.

ANSWER.—We regret to say that we are unable to furnish you with the information you request. The only thing we can do is to publish your letter in THE DENTAL DIGEST in the hope that some of our readers may be able to help you.

Editor, Practical Hints:

I have a case that has baffled me, and I am writing to you in the hope that you can furnish me with some helpful information.

Case History.—Young man, 26 years of age, good general health, teeth well formed in good alignment and well kept, gums firm and healthy, diet ample in calcium content. Since his last visit six months ago the patient has developed eight gingival so-called erosion cavities.

Is there any treatment, medicine or diet which will prevent or at least retard the formation of similar cavities?

A. A. F.

ANSWER. — Presumably you have eliminated mechanical factors as a cause of erosion. The fact that the intake of calcium is sufficient does not mean that it is being utilized. There may be a disturbance in metabolism, and the greater part of it may be going to waste. This happens not infrequently and the patient should be placed in the hands of a good physician.

There is really nothing that you can do, since it seems to be quite evident that the condition in the mouth is merely a symptom of a systemic disturbance. Cod-liver oil sometimes aids the fixation of calcium.

Editor, Practical Hints:

Is it practical and advisable to use natural teeth on an artificial denture? If so, how do you prepare them for sterilization and retention?

G. P. J.

ANSWER.—Of course years ago natural teeth were used on dentures for

the simple reason that there were no satisfactory substitutes, but at the present time it is neither practical nor advisable to use them. They become very brittle, and we know of no satisfactory means of retention. They would also be subject to caries.

Editor, Practical Hints:

Will you kindly state briefly the treatment in case of brown streaks in the enamel? This treatment appeared in the columns of THE DENTAL DIGEST about four years ago, but I have forgotten it. Although I believe it is pyrozone that is used, I do not remember the details.

R. M. R.

ANSWER.—We have looked through the files of THE DENTAL DIGEST and can find no mention of the use of pyrozone for the removal of stains from the external surfaces of teeth. However, there would be no harm in trying it in this manner. The tooth should be carefully isolated by the rubber dam so that the pyrozone cannot come in contact with the soft tissues.

If your case should happen to be one of mottled teeth, then no process of bleaching will be effective.

Editor, Practical Hints:

Advice in the following case would be of great help:

The patient, a young lady, 19, for several years has experienced a disturbing swollen condition at intervals at a point about one inch anterior to the right tragus. The swelling is approximately the size of a pea and is very sensitive to palpation. This condition occurs without warning, rising to a tense, indurated nodule in just a few minutes' time. The eating of apples, preserves or any fruit most frequently seems to be the exciting cause. The nodule may remain for a few hours, or even a day, and then disappear speedily. There is some involvement of the cervical glands, and much pain attends mandibular movements. In some instances the patient has been unable to masticate food at all. A draft, a slight touch and changes of temperature will often aggravate the pain to intensity.

X-rays have been taken, which seem to preclude dental causes; probes have been inserted in the hope of opening an occluded lumen. Efforts so far have proved of no corrective value.

If surgery were resorted to, do you think an ensuing scar would be avoidable?

R. K. H.

ANSWER.—It is very difficult and not at all satisfactory to try to diagnose a case such as this at so great a distance. It would almost seem that there was an infection of the parotid gland, which would account for the nodule, the swelling of the cervical gland and the difficulty in mastication. In fact, the symptoms resemble very much those of mumps, though the duration of time would rule that out. There is evidently an involvement of a nerve, probably due to pressure.

Any extra-oral incision is liable to leave a scar varying in extent with the amount of surgery involved. It is to be avoided if possible.

Editor, Practical Hints:

A woman patient has been wearing an upper denture for two years and complains of a burning sensation on the palate. What can I do for her to give her relief? Taking out the denture gives relief.

The same patient, about 55 years of age, has a lower bar partial denture and complains that when she wears it for any length of time it tires the two bicuspids, to which clasps are applied. These teeth are not loose and the clasps fit finely. Painting with zinc chlorid or silver nitrate gives relief for a week or ten days. Will making gold crowns on these teeth relieve the condition? What can I do?

I extracted the lower right first molar for a patient. The root broke off and I had trouble in getting it out. Necessarily some bone was destroyed and pain followed. Very little bleeding followed and the pain grew worse. I have cauterized the socket with sulphuric acid and neutralized it with sodium bicarbonate, packed it with camphophenique, oil of cassia and iodoform powder. After these treatments relief is brief. It is now fifteen days since the operation, and she still complains of a low constant pain, although it is less than it was. The x-ray shows that the root is out, and no abscess nor cyst is present. There is very little swelling. What do you suggest that I treat this socket with to promote healing and lessen the pain? She objects to the odor of iodoform.

E. T. K.

ANSWER.—Burning sensation from a vulcanite plate was first thought to be due to an idiosyncrasy to vulcanite or to pressure on the endings of the palatine nerves. Later it was found that it might be due also to the roughness of the rubber when vulcanized against plaster. In many instances the use of tinfoil relieves the difficulty. Porosity or roughness may be the cause.

In regard to the lower partial it is probable that there is a strain being placed on the two bicuspids. This may necessitate remaking or repositioning the clasps. The use of stress-breakers is often helpful.

In the third case you are evidently dealing with a dry socket, which may give trouble for three weeks. The fact that the pain is lessening is a good sign, and about all you can do is to keep the patient as comfortable as possible. Cauterizing the pocket, as a rule, is of little value, and curetting to form a blood clot is not uniformly successful.

Editor, Practical Hints:

I used a mandibular injection for the extraction of both bicuspids on the same side.

Twenty minutes after the injection I proceeded with the extraction. I extracted the first bicuspid painlessly; the second bicuspid was painful in extraction. In order to anesthetize it I used a pericemental injection under pressure. This of course was contra-indicated, as the tooth was infected. I extracted it painlessly.

The question arises as to why the second bicuspid was not anesthetized. How would you anesthetize it without using a pericemental injection?

T. M. T.

ANSWER. — There may have been more inflammation around the second

bicuspid than around the first and consequently a longer time would be necessary for anesthesia, but it is possible that a full anesthesia could not be obtained.

Sometimes the injection of the long buccal nerve is of material assistance. It is always dangerous to inject into an inflamed area.

Editor, Practical Hints:

I removed a swaged crown from a tooth which shows no clinical symptoms. It is negative to the x-ray, but now that the crown has been removed it is very sensitive to cold and slightly sensitive to warm water.

I am contemplating inserting a two-piece crown with cast cusps. I have treated the tooth with zinc chlorid, tincture of iodin and aqua distillata, equal parts. I rubbed the mixture on the tooth with cotton and then applied a hot burnisher.

My questions, obviously, are: (1) will the cementation of the new crown have a tendency to relieve the condition? (2) What is the general treatment of teeth sensitive to cold after removal of crowns?

A. G.

ANSWER.—When a tooth is sensitive to cold, it is a very good sign that it is alive. The tooth in question is sensitive because most of the enamel has been removed, and the replacing of the crown will probably remedy the trouble.

Silver nitrate is the most efficient drug in overcoming sensitiveness and should be used where the discoloration will not be objectionable, as in this instance. The Howe method is to be preferred.

Editor, Practical Hints:

The patient is a woman, probably about 38 years of age, and appears to be in good health, but states that there is a tendency for her arm to go to sleep as soon as she lies down.

The thing I am writing to you about is as follows:

The upper left lateral and central show an abnormal area about the apices. She tells me that she has noticed a full feeling occasionally on the lingual of these teeth and then it will disappear. These teeth, according to the vitality test, are the central 10 and the lateral 10 and 11. The lateral has a synthetic filling in the proximal and gingival surfaces. The central has a cavity and may have had a synthetic one at one time. I should like to know what has caused this rarefied area about these teeth, and whether you would think it best to extract both the central and the lateral. She feels them tender to percussion.

J. A. L.

ANSWER.—The fact that a tooth responds to a vitality test is not positive proof that it is in a healthy condition. You will probably find that the pulps of the teeth are partly putrescent.

It would seem best first to try to treat and fill the teeth before resorting to extraction, assuming, of course, that the patient is not suffering from any systemic trouble.

DIETETICS and HEALTH

Dietary Lessons from the Chinese*

By JOHN HARVEY KELLOGG, M.D.

The Occident has learned much from the Orient. Only recently have we begun to recognize our opportunity for profiting by the ripened experience of a nation that during long ages has been accumulating practical data gathered in the hard school of dearth and famine. China has been compelled to study dietetics by the widespread failure of crops through floods and other elemental disasters that exposed millions of her subjects to death by starvation. Her vast areas, so crowded with human beings that every possible food resource must be utilized to best advantage, have been great experiment nutrition laboratories, in which lessons have been learned at vast cost but with results the commanding significance of which cannot be disputed.

One of the facts that China has demonstrated by age-long experience is that flesh meats are non-essential as human foodstuffs. Dr. W. H. Adolph, professor of chemistry in Yenching University, Peking, China, in an interesting article in the *Scientific Monthly* for July presents the following comparative table showing the foods consumed in North and South China and the United States:

COMPOSITION IN PERCENTAGES BY WEIGHT

	North China	South China	United States
Cereals	57.0	59.7	25
Legumes	7.8	18.2	
Vegetables and fruits	27.1	21.0	20
Sugar and starch	0.2	0	14
Fats and oils	0.8	1.1	
Meat and fish	3.9	0	18
Eggs	0.5	0	5
Milk and cheese	0	0	15
Other foods	2.7	0	3
	100.0	100.0	100

A study of the above table reveals several most interesting facts.

First may be noted the fact that while meat and fish constitute 18 per cent or nearly one-fifth of the total food consumed in the United States, the amount of these foods consumed in North China is less than four per cent, while in South China meat and fish are used in quantities too small to have any significance, so that they are represented in the table by 0.

It is especially interesting to note that in South China eggs and milk, as well as cheese, are so little used that they cannot be mentioned in a general summary, and that in all China milk and cheese are practically unknown, while in North China, where eggs are eaten, the amount consumed is only one-tenth the amount used in this country.

* Reprinted from *Good Health*, November, 1929.

It is evident that the Chinese people are not taking any chances of injury from a high protein diet.

The following table from the same source shows the per capita consumption of meat by the world's leading nations:

	Grams	(Ounces)
United States	149	5.0
Great Britain	130	4.3
France	92	3.0
Belgium and Holland	86	2.7
Austria-Hungary	79	2.6
Russia	59	2.0
Spain	61	2.0
Italy	29	1.0
Japan	25	0.8
China (North)	15	0.5
China (South)	0	0.0

If the contention of the Meat Board respecting the necessity for meat had any foundation in scientific fact, the Chinese race should have disappeared a thousand years ago. Instead, and in spite of the fact that "the mass of the people are dangerously underfed," as this writer remarks, "attention has been called to the tall, apparently robust physique of Shantung, and the world traveler reminds us of limitless capacity for toil and labor."

Professor Adolph has had unusual opportunities for the study of the Chinese diet and has written highly valuable papers on the subject, in which he has pointed out various excellent practices that we might adopt in this country with great profit. His observations "show how greens, raw vegetables, sprouted soy beans, short-time cooking, are some of the qualitative devices which blind experimentation has led the Chinese to employ to supply vitamins and similar essentials. Certain districts have reverted to a mixture of cereals rather than depend on a single vegetable protein, apparently with profit. Abundance of roughage is characteristic of the dietary; constipation and the use of pills are almost unknown."

Although, as the data above show, the average Chinaman eats less than two-thirds as much protein as the average American, the amount of protein eaten by the Chinaman is, nevertheless, very ample. It is more than double the amount that has been adopted as a standard by leading specialists in this country who devote themselves to the treatment of diabetes. The amount of protein eaten by the Chinaman is twice as much as the quantity shown by the classical experiments of Chittenden and the carefully controlled experiments of Sherman to be amply sufficient to supply the needs of the body.

If, as has been contended, the Chinaman is small in stature because of his diet, the fault is not in the deficiency of protein but in the lack of lime. Stature depends upon the skeleton. Good bone nutrition requires an ample supply of lime, the one element that appears to be somewhat deficient in their national diet on account of the non-use of milk.

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All communications should be addressed to Elsie Pierce, care of THE DENTAL DIGEST, 220 West 42d Street, New York, N. Y.

NOTE—HAVE YOU A BETTER WAY? HAVE YOU A TIME-SAVING SHORT CUT? DO YOU KNOW A "STUNT" THAT LIGHTENS THE WORK OR MAKES FOR GREATER EFFICIENCY IN THE OFFICE? IF SO, WRITE TO ELSIE PIERCE. YOU MAY HELP MANY GIRLS WHO ARE BEGINNERS—AND YOU KNOW HOW YOU NEEDED HELP DURING YOUR FIRST FEW MONTHS IN A DENTAL OFFICE. PERHAPS YOU NEED HELP NOW. WRITE TO ELSIE PIERCE—SHE WILL HELP YOU.

Dear Miss Pierce:

I am striving to become efficient in my work as dental assistant and hygienist and am in search of a reading list that gives a good foundation as well as advanced study. Any other suggestions you might offer will be greatly appreciated, as my only knowledge is that secured during a few months' work.

M. C. M., Detroit.

ANSWER.—We do not quite understand your statement that your only knowledge is that secured during a few months' work, as related to your previous statement implying that you are a dental hygienist as well as an assistant. In Michigan there is a law which makes it necessary for all women who practice as hygienists to be registered after a state board examination. To take this examination, one must be graduated from a reputable school of hygiene, so we take it for granted that you are a graduate from such a school. We always urge young women employed as assistants or hygienists to be very careful not to overstep the boundaries of their service as permitted under the law.

We should recommend the following reading matter: Dental Anatomy, Principles of Bacteriology, Diet and Nutrition, Dental History, Mouth Hygiene, The Business Side of Dentistry. If you will write to the Library of the American Dental Association, they have a package library for both the assistant and the hygienist which you can secure for a nominal fee. This can be retained for a certain length of time and then returned.

Why do you not join the assistants' society in Detroit? Get in touch with Miss Beatrice Hann, Secretary, 14950 East Jefferson Avenue. They have classes and clinics on the phases of your work which would be of great help to you.

Dear Miss Pierce:

In the November issue of THE

Dental Digest there is an inquiry regarding saliva ejectors.

If glass or porcelain is stained and murky for any reason, after sterilizing by boiling or soaking in very strong lysol (I use the latter), drop into the solution two or three drops of commercial hydrochloric acid and shake it around for just a moment. Your glass will then be clear and can be rinsed out in water. If this is done quickly, the acid will not have time to etch the glass.

H. L. Davis, D.D.S., Los Angeles.

We thank Dr. Davis for his interest and splendid suggestion. It will help many of our readers.

Dear Miss Pierce:

When my employer is busy or is not in the office, I have considerable emergency work to do, such as temporary fillings, etc. I am not certain as to how far I should go in this work. Should the drill be used to take out cement fillings, etc.? Will you kindly tell me the rule regarding a dental nurse doing operative work?

Toronto, Canada.

Answer.—A dental nurse (assistant) is not permitted to do any operative work whatsoever under our state dental laws, and I take it for granted that the Canadian dental laws contemplate the same procedure. In order that you may be certain, I suggest that you get a copy of the dental law covering the province in which you are employed and also seek advice from your dental examining board. It is unfortunate that a dentist should permit his assistant to do dentistry and much more so that he should ask her to do it, knowing full well that she is liable to arrest and prosecution. There is plenty of work to do in an office besides doing something which is illegal and can only lead to trouble.

Dental hygienists are permitted only to clean teeth and are restricted in this from going farther than to the free margin of the gum. Their license in no way permits them to do general dentistry such as you are doing.

Dear Miss Pierce:

How to remove stains or deposits from glass or porcelain saliva ejectors:

In localities where the water is hard, lime will deposit on the tubes, giving them a stained dirty look. Boiling them in washing powder or soda solution will not remove this deposit. Get a ten- or twelve-ounce bottle of diluted muriatic acid—the exact strength is not important, ten to twenty per cent being satisfactory. From a dealer in photographic supplies secure a flat, shallow glass tray —the 5 x 7 size is best. Lay the tubes in the tray and cover with the acid for from ten to fifteen minutes. Pour the acid back into the bottle and rinse the tubes and tray under the water tap, then put a teaspoonful of soda in the tray with enough water to cover the tubes. In ten or fifteen minutes remove the tubes and rinse.

This will also remove lime stains from drinking glasses. Stand the glasses on a glass slab and fill with the acid solution. With a cotton swab daub the outside of the glass with the solution and in ten or fifteen minutes proceed as above. A novice might better wear an old pair of rubber gloves

while handling the acid. Also, keep the acid in a glass-stoppered bottle tightly corked when not in use.

L. S. BUGBEE, D.D.S., Montana.

The suggestion above is a very helpful one, and we thank Dr. Bugbee for his help. We suggest that this muriatic acid solution be used by I. L. M. of Nebraska, who in the December issue was perplexed about the hard water deposits in the cuspidor. It may solve her problem.

Dear Miss Pierce:

I had a very hard time cleaning impression trays until I tried the finest steel wool I could procure, using this with soap, and now how easy it is to make them shine! I hope this may help some other assistant.

D. B., Youngstown, Ohio.

This is another splendid suggestion which we pass on to our readers with sincere appreciation to D. B. for her help.

Dear Miss Pierce:

I have been a dental assistant for a number of years, and for the last two years I have had full charge of all the x-ray work. Can you tell me whether there is any place near here where I can learn more about this work, as I should like to specialize in it. I never fail to read your Questionnaire in THE DENTAL DIGEST and enjoy it very much.

D. B. L., Tarrytown, N. Y.

ANSWER.—We suggest that you get in touch with the Columbia University and New York University Dental Schools, also the educational departments of the companies manufacturing x-ray machines and equipment, asking them for information regarding courses in x-ray procedure. I presume that you know the formalities required by law regarding the manipulation of an x-ray machine, permit, etc., for x-ray laboratories.

Educational and Efficiency Society for Dental Assistants, First District, New York, Inc.

A regular meeting of the Educational and Efficiency Society for Dental Assistants, First District, New York, Inc., was held at the Academy of Medicine, 2 East 103rd Street, New York, N. Y., on Tuesday evening, November 12, 1929. Dr. W. E. Aughinbaugh spoke on *Experiences of a Doctor in Tropical Countries*. He told many interesting stories of his adventures in far places among strange peoples. *Musings of an Assistant Editor* was the title of an interesting address presented by Ann Maloney.

Following the usual procedure, classes on topics pertinent to dental assisting are being conducted once each week under the supervision of members of the dental profession. A class in dental anatomy, conducted by Dr. M. Russell Stein, has been successfully completed. The studies of this class included lectures on tooth forms, names, structure and functions, as well as practical work

in carving teeth from wax. Under the direction of Dr. A. L. Greenfield a group is now studying the care of the x-ray machine, the proper technic for taking radiographs, the developing, mounting and filing of pictures. Classes on other subjects of equal value to the assistant are being organized. All members of the Society are eligible to attend these classes. Further information may be obtained by addressing the Secretary of Classes, Mary O'Connor, c/o Dr. E. Reiner, Cliffside, N. J.

On November 18th a regular meeting of the Clinic Club was held. Dr. C. Boone gave an address on dental economics. There was also a demonstration by Martha Keit on the preparation of swabs, and methods of cleaning and sterilizing impression trays were shown by Sylvia Messinger. Members of the Clinic Club successfully presented clinics on secretarial assistance, economy suggestions and the sterilization of surgical accessories before the meeting of the Valley District Dental Society at Springfield, Mass., on December 2nd. These clinics demonstrated methods of bookkeeping, record-keeping, collection of accounts, telephone courtesy and the writing and filing of checks; original suggestions for more efficient and economical procedure in the dental office; and methods of folding gauze swabs and packs, sterile towels, the care of surgical instruments, etc., as well as first aid in the dental office. Demonstrations were presented at the First and Second District Better Dentistry Meeting at the Hotel Pennsylvania, New York, on December 11th, and clinics will be given before the Kings County Dental Society in February. The next regular meeting of the Clinic Club will be held at the office of Dr. S. R. Eolis, 1475 Broadway, New York, on Monday, January 20, 1930, at 7:30 P. M. The Secretary of the Clinic Club may be addressed: Gertrude Gehm, 921 Bergen Avenue, Jersey City, N. J.

The Society meets regularly on the second Tuesday evening of each month, October to May, inclusive, at the Academy of Medicine, New York. Its motto is: "Greater Education for Greater Efficiency." It does not conduct a registry nor is it connected with commercial enterprises. Dental assistants employed in ethical dental offices are invited to the meetings and, if interested, to join the organization. Members of the dental profession are always welcome at the meetings. The date of the next meeting is January 14, 1930.

Montreal Dental Assistants Association

A meeting of the Montreal Dental Assistants' Association was held on Monday evening, November 18, 1929, at Dr. G. Franklin's office in the Medico-Dental Building.

The speaker for the evening, Dr. George S. Cameron, Professor of Prosthetics, McGill University Dental Faculty, outlined the aims of the Association and emphasized its work.

At Dr. Cameron's suggestion a study club to meet weekly was formed for the purpose of enabling dental assistants to increase their professional knowledge and thus allow them to be more useful to the dentist and the public.

Organization and the Dental Assistant*

By Grace B. Renshaw, Cincinnati, Ohio
First Vice-President, American Dental Assistants Association

In this age we hear much about organization. It is even said that as a people we are too highly organized, and perhaps there is some truth in this statement. Nevertheless, organization has its place in the economic and educational system of this country. It is my purpose to try to emphasize the real value of our organization to the dental assistant—and not only to the assistant, but to the members of the dental profession as well.

The Dental Assistants Association has achieved much. Let us look backward. Some time ago I heard a story about some mountain-climbers who were ascending the side of a steep mountain. The way seemed long. They felt that they were not covering much distance, and one of the men said so to the old guide, who told them to stop and look backward and see what they had left behind. This they did and saw that the distance was much greater than they had thought. So with us as dental assistants. Let us stop and look backward and see what we have left behind.

We see the days when the helper in the dental office was not an assistant at all, but just a maid. Just a little farther along we see her as an office girl, answering the telephone and door. A little more traveling down the years and we find her doing a little assisting at the chair, and last year Dr. Gurley told us that we were laboring along with the dentists to make the progress of the world. We are beginning to realize how far we have traveled toward the peak of our ambition — the aim to make our calling a profession and to be classed as professional women. The dictionary gives the definition of *professional* as "one distinct from amateur, one who is especially prepared." This training cannot be ours until there are classes established for that purpose in dental colleges, and until that time we must depend mostly upon our own efforts to reach the standard of assistance expected of us.

In treating my subject I want to visualize the *outlook* and *inlook,* if I may be permitted to coin a word, of a dental assistant as revealed by the floodlight of organization work.

Not so many years ago, shut up as we were within the four walls of our operating rooms, our outlook was limited. As far as we could see, there was no future. We might have been satisfied just to labor, and dentistry would have lost one of the great forces which is working toward the end of better dentistry. But in every big movement there must be a pioneer, and one woman had a vision of the possibilities of the calling of a dental assistant. Interested in the problems of young womanhood and vastly interested in the profession of dentistry, Juliette A. Southard gathered together a group of these young women and inspired them with her enthusiasm

*Read before the Fifth Annual Meeting of the American Dental Assistants Association, Washington, D. C., October, 1929.

and ambition for the dental assistant. Thus from a small beginning grew an organization, and this, your organization, is now an asset for every dental assistant. Sometimes as business people we do not make the proper use of our assets and then they become liabilities. It is my wish to emphasize the proper use of the opportunities afforded by this organization.

Let us turn on the floodlight and see what is revealed. If you are using your organization, your range of vision is much greater than it was when you were confined within the walls of your own office. What is your outlook? Do you see in the years to come groups of women, trained, alert and capable, working as associates with those men who have taken up the profession of dentistry, cooperating with them to give real service? Perhaps when you entered this work, you had no idea that it was anything but a job, and not very much of a one at that—just something to tide you over and give you the necessities of life. In the light of our organization work have you not learned that it is a real job and a far-reaching one, as all service jobs are? Most jobs can become real jobs, and it all depends upon you and your vision. The one outstanding feature of our association work has been to show us the possibilities in our vocation. Bruce Barton said, "Only that job is worth much which has tied to it the price-tag of constant increasing study and work." Increasing study and work —surely that is one of the slogans of our organization.

In the past four years it has been my privilege to be directly associated with local and national organization work, and I know that those who have used the opportunities afforded them have derived much benefit. This benefit results in an endless chain. The assistant's personal benefit has benefited the doctor with whom she is associated and in turn has brought better dentistry to his patients and is helping to establish a better health service throughout the world. I have seen girls broaden and develop in a way that has been almost miraculous. Those same girls have used their influence, perhaps unconsciously to the dentist, to develop that office, resulting in a cooperative service invaluable to the public. Some one has said that service is the rent you pay for the space you occupy.

Before you had the vision of more efficient service, you perhaps gave little thought that you in your small way could help in the great health program which all of our thinking dentists are now promoting. You as an assistant, doing the work of an assistant in the most efficient and capable manner, are important spokes in the wheel —and remember it is the spokes which strengthen the wheel! I wonder if we all appreciate just how much of an influence we radiate in the operating room. Every act is observed by the patient. We do not always have to talk the things which promote dental health; our every duty emphasizes the importance of cleanliness and sterilization for health and prevention of disease. Our local societies put on programs which instruct us so that we can talk dental health intelligently to patients and make them realize the importance of having healthy mouths if they would have good general health. Perhaps some of you did have these visions before we had this organ-

ization, but I am sure the majority did not, and, no matter how good an assistant you were before, I know you are much better if you have used the opportunities afforded you for study. You may have had in mind some of the things which would help your office to be more efficient, but I am confident that with groups working together for the same purpose much more has been accomplished. Associating with others in the same line of work has given you self-confidence to suggest and put through in your office many reforms, and the dentists themselves have awakened to the fact that they must have intelligently trained assistants if they would be successful in their service. Now that they see that you are in earnest, they are beginning to cooperate with you and are giving their time to present clinics and lectures, and, better than that, in your own offices they are recognizing that your motives are unselfish, and that you are giving of your own free time—your recreation time—to prepare yourself better for assistance in service. All of this is the result of vision. Since dentistry is now recognized as of equal importance with medicine, is there not need for trained dental nurses?

Your local society is your study club; all of its educational features and contacts are developing you. There are two great factors in the success of any undertaking, contacts and cooperation, and this has been splendidly illustrated in the past months in the endurance tests of the Question Mark and the St. Louis. They were able to surpass previous records because of the contacts for refueling and food and splendid cooperation. From our contacts, local and national, we obtain our inspiration and knowledge, and these with the cooperation of those who work with us are bound to bring success. I wish that every dental assistant could attend a national convention such as this. Real inspiration comes from the contacts in a national meeting. You go back to your office knowing that you have chosen a job which is worth while, and you resolve to make yourself worth while for the job. The floodlight of organization reveals to you a path not strewn with roses, but one that is difficult to follow, yet which at the end terminates in a field of humanitarian service.

Your organization work should give you the power to see yourself as others see you. In the light of your study and observation of other offices and assistants what have you found out about yourself? What does your *inlook* reveal? First, in your service in the operating room do you observe all of the rules of hygiene and asepsis? Are you saving the dentist's valuable time? Do you anticipate his needs? Have you studied out the best ways to assist him? Do you give special care to those mechanical duties of the laboratory? Have you given special study to the proper way of answering the telephone? Have you developed tact, without which no dental assistant can be a success? Are you loyal to the office and the doctor? Are you cooperating with him and the others in the office? I recently read the following entitled *Don't Fool Yourself:*

"The old saying, 'We are all in the same boat,' well illustrates the importance of pulling together. When one of us refuses to take an oar and help

propel the boat along, we are simply riders, not rowers. In the organization where you work you are either helping or hindering. And here's the point—you know it. But here's the bigger point—everybody else knows it." We cannot fool ourselves. Dr. Boyd Gardner told us in Detroit that men and women are just as valuable as they are willing to work with others. Has the floodlight of organization revealed to you your own shortcomings in character and work?

I have endeavored to emphasize the opportunities and privileges afforded by our organization. I trust that those of you who have not heretofore used those opportunities to the fullest extent will do so from this time on. If you are a member just in name, you can never expect to get anything out of it.

We should endeavor to reach the young women who do not belong and give them the message, inviting them to participate in the advantages which have been given to us. Use your influence to organize new societies. You are introducing something worth while. Your messages and plans will tend toward the growth of young women, and as women we should do all we can to bring success to women. The larger our membership becomes, the greater will be our influence for the advancement of our vocation.

We are pioneers in this field, and we must not become discouraged. The little seed was planted years ago, it became a small plant, it is now blossoming into flower. This is not the end; there will be further development, and those who follow after will surely reap the harvest of our efforts.

Let us continue to go forth in the bright light shed by our organization work, striving always to bring into the field of dentistry, in which field we have placed ourselves, efficient and intelligent service, proving to the dental profession the value of our organization and the need for special training in their own dental colleges and proving to the public that ours is a real field of service.

1004 Neave Building

BOOKS RECEIVED

A BOOK MAY BE AS GREAT A THING AS A BATTLE—DISRAELI

Ceramics in Dentistry—A Textbook Dealing with the Manipulation of Porcelain, the Technique and Construction of Porcelain Jacket Crowns for Vital and Pulpless Teeth, and the Technique of Filling Teeth with Porcelain Inlays, by Albert Leland LeGro, D.D.S., F.A.C.D., for ten years Director and Instructor in the Porcelain Section of the celebrated Detroit Dental Clinic Club.

This is the second edition of a book that has already taken its place as a leader in the field of porcelain manipulation. The greater portion of the work is devoted to the jacket crown, and the whole operation from the preparation of the tooth to the finished product is carefully and clearly shown with the aid of many fine illustrations.

The second part of the book describes the author's technic for the porcelain inlay. In addition, there is an appendix dealing with the jacket crown where the shoulder is in the enamel.

This book is admirable for the man who wishes to take up this fascinating branch of dentistry, which, by the way, is the highest expression of esthetics and most appreciated by patients.

329 pp., with 332 illustrations and index. Brooklyn, N. Y.: Dental Items of Interest Publishing Co., Inc., 1929. —A. M. J.

EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—ADDISON

A little yearning is a dangerous thing.

The only time a horse gets scared nowadays is when he meets another horse.

A fruit grower near Berlin, Germany, has successfully kept birds from his orchard by connecting a loud speaker to his scarecrow.

Works Two Ways

A poet says when he can't sleep he gets up and writes poems. That's fine. When we can't sleep we'll read them.

(Patient)—Doctor, what are my chances?

(Doctor)—Oh, pretty good, but don't start reading "continued in our next" stories.

Nothing Like Being Careful

An old lady went to have her picture taken, and the photographer noticed her tying a piece of clothes line around the bottom of her skirts.

"What's the idea of that?" he asked. "I can't take your picture that way."

"You can't fool me, young man," said the old girl. "I know you see me upside down in that camera!"

When the distinguished visitor, Dr. Oliver Wendell Holmes, was leaving a certain hotel he was asked to write something as a souvenir in the hotel register.

"With pleasure," said the doctor, as he wrote:

"I was told to come to this hotel for change and rest. The waiter got the change and the landlord got the rest."

(Sam)—You say your sister makes up jokes. Then she is a humorist—what?

(Abe)—No, no, she works in a beauty parlor.

A Tough Deal

"It was simply awful. I never had such a tough time in my life. First I got angina pectoris, followed by arteriosclerosis. I was just through these when I got tuberculosis, pneumonia and phthisis. Then they gave me hypo-dermics. Appendicitis was followed by a tonsilotomy.

"I really don't know how I pulled through it. It was the hardest spelling-contest I've ever had."

(English Premier)—Well, your Majesty, we have stopped the crime wave in Scotland.

(The King)—Fine. How did you do it?

(Premier)—By charging for room and board in the jails.

It seems now that the only way to get rich quick is slowly.

(Kind Gentleman—to little boy eating an apple)—Look out for the worms, sonny!

(Little Boy)—Phooey! When I eat an apple the worms have to look out for themselves.

An old lady in Chicago who was celebrating her eightieth birthday with a number of friends was asked this question: "What do you consider the most wonderful invention that was made during your lifetime?" Her answer was, "modern false teeth."

(Sophomore)—Say, big boy, I would like to have a receipt for that dollar I paid back to you.

(Senior)—What do you want a receipt for?

(Sophomore)—Well, when I go to heaven and St. Peter wants to see the receipts for all my debts, do you think I'm going to go all over hell looking for you?

It's nice to know a foreign language if you know it well enough to avoid making bad breaks. The new Governor of Porto Rico, Mr. Roosevelt, has a working knowledge of Spanish, and made his inauguration speech in that language. The story is now told that the use of Spanish words similar in sound but different in meaning led him to tell a group of parents that he was the mother of four children, while on another occasion he introduced a bureau chief as a tapeworm.

Sandy McGurk met his friend Mike Murphy on the street and told him how badly he was suffering with a toothache.

"Get your tooth out," said Mike.

"Not me," said Sandy. "I'd have to pay a dentist five bucks. Say, Mike, just give me a good smack on the jaw, and maybe the tooth will come out."

"What! hit me best frind—nothin' doin'."

Just then Sandy landed a wallop on Mike's nose that changed his mind, and Mike handed Sandy such a poke on the jaw that a good tooth as well as the bad one rolled out on the sidewalk.

A policeman who saw the whole affair and thought it was a street brawl, took both of them into the night court and made a complaint against them.

Sandy explained to the judge how and why it all happened. The judge, with a smile, told the policeman to let the Scotchman go, but the Irishman would have to be locked up or pay a fine of five dollars and costs for practicing dentistry without a license.

FUTURE EVENTS

EASTERN DENTAL SOCIETY OF NEW YORK

SCIENTIFIC SESSION

Thursday Evening, January 2, 1930

Meeting Place: 425 Lafayette Street, New York, N. Y.

Essayist: James Kendall Burgess.

Subject: *Consideration of Some of the Fallacies Pertaining to Bridgework.*

Round Table Discussion (in Amphitheatre)—8:15 P. M. Sharp.

Subject: *Bridgework.*

Leader: Louis I. Abelson.

EASTERN DENTAL PROGRESSIVE CLINICS

A series of clinics covering the subject of *Bridgework* in detail will begin promptly at 7:30 P. M.

Clinicians: I. Brown, A. I. Brown, S. Charles Gardner, Charles Goodman, Amshel Gueft, Harry W. Rosalsky, M. B. Rubin, Joseph N. Sablow, Benjamin Shapiro, David Slutskin, Howard T. Stewart, Henry Wasserman, S. Waterman, M. H. Zeisler.

THE KINGS COUNTY DENTAL SOCIETY will hold its January meeting at the Building of the Medical Society of the County of Kings, 1313 Bedford Ave., Brooklyn, N. Y., on Thursday, January 9, 1930, at 8:30 P. M.

I. L. Furnas, D.D.S., Professor of Prosthetic Dentistry and Dental Technology, Western Reserve University, Cleveland, Ohio, will speak on *Denture Construction for the General Practitioner.* The discussion will be opened by Francis Scott Weir, D.M.D.

At 7:30 P. M. the following clinics will be held:

Some Fundamentals in Full Denture Impressions, by Russell W. Tench, D.D.S.

Art and Esthetics, by Francis Scott Weir, D.M.D.

Stable Bases for Full Dentures, by L. Thomas Asche, D.D.S., Newark, N. J.

Bite Records and Mounting Casts, by Charles M. McNeely, D.D.S., President, Second District Dental Society, New York.

JACOB SHAPIRO, *President,*
CHARLES OGUR,
Chairman, Educational Committee.

THE CHICAGO DENTAL SOCIETY

SIXTY-SIXTH ANNUAL MEETING AND CLINIC

JANUARY 13-15, 1930

The Chicago Dental Society wishes to announce the 1930 Annual Meeting and Clinic at the Stevens Hotel, where full provision is made for the comfort of all those in attendance. The experience of conducting the 1929 Meeting at the Stevens has provided a basis for conducting the next meeting, which without doubt will reflect in a substantial measure the increasing importance of this annual event.

All members of the American Dental Association are cordially invited to attend. Preliminary programs will be mailed to all members of the A. D. A. some time in December of this year. The program will be divided into eight sections, as follows:

Section I—Operative Dentistry.
Chairman: Frank G. Conklin, 4010 West Madison St.
Vice-Chairman: A. E. Schneider, 25 East Washington St.

Section II—Full Dentures.
Chairman: E. C. Pendleton, 916 Galt Ave.
Vice-Chairman: S. A. Hutt, 3166 Lincoln Ave.

Section III—Partial Dentures; Crown and Bridge.
Chairman: W. I. McNeil, 59 East Madison St.
Vice-Chairman: R. A. Jentzsch, 185 North Wabash Ave.

Section IV—Oral Pathology, Histology, Bacteriology and Chemistry.
Chairman: J. R. Blayney, 2209 Rosemont Ave.
Vice-Chairman: W. G. Skillen, 311 East Chicago Ave.

Section V—Mouth Hygiene and Public Health.
Chairman: Lon W. Morrey, 4235 North Hermitage Ave.
Vice-Chairman: Corvin F. Stine, 1319½ Estes Ave.

Section VI—Orthodontia.
Chairman: Abram Hoffman, 311 East Chicago Ave.
Vice-Chairman: Harris W. McClain, 55 East Washington St.

Section VII—Oral Surgery and Radiography.
Chairman: Roscoe L. Stout, 55 East Washington St.
Vice-Chairman: Joseph G. Wiedder, 25 East Washington St.

Section VIII—Dental Economics.
Chairman: Harold S. Smith, 180 North Michigan Ave.
Vice-Chairman: F. van Minden, 185 North Wabash Ave.

The Program Committee is under the direction of Stanley D. Tylman, assisted by Henry C. Lee, E. C. Pendleton and Roscoe L. Stout.

The manufacturers' and dealers' exhibits will be held in the spacious Exhibit Hall, one flight down from the main floor. All applications for exhibit space should be directed to Dr. C. Davidson, Chairman Exhibit Committee, 55 East Washington St., Chicago, Ill.

HUGO G. FISHER, *President,*
HOWARD C. MILLER, *Secretary,*
55 East Washington St., Chicago, Ill.

THE NORTH DAKOTA STATE BOARD OF DENTAL EXAMINERS will hold its next meeting at Fargo, N. D., January 14-17, 1930. Applications for examination must be in the hands of the Secretary by January 4, 1930.

GILBERT MOSKAU, *Secretary,*
Grand Forks, N. D.

THE DELAWARE STATE BOARD OF DENTAL EXAMINERS will hold its next meeting in the Municipal Bldg., Tenth and King Streets, Wilmington, Del., January 22-23, 1930, from 9 A. M. to 5 P. M.

For further information, address

W. S. P. COMBS, *Secretary,*
Middletown, Del.

THE PENNSYLVANIA STATE DENTAL SOCIETY will hold its Mid-Winter Meeting January 30-31, 1930, at the Penn-Harris Hotel, Harrisburg, Pa. A splendid program is being prepared.

RICHARD D. CROWLEY,
111 North Second St., Harrisburg, Pa.

THE BALTIMORE CITY DENTAL SOCIETY will hold its fifth annual Mid-Winter Clinic on February 7-8, 1930, at the Lord Baltimore Hotel.

U. G. Rickert of Ann Arbor, Michigan, will give a clinic and discussion on *Oral Diagnosis;* Dayton D. Campbell of Kansas City, Mo., a clinic on *Full Dentures;* Frank R. Kent of Boston, Mass., a lecture and demonstration on *Dental Economics;* and Albert J. Irving of New York a clinic on *Gold Inlay Technic,* paying particular attention to the sliced cavity preparation.

The number who may subscribe to the clinic is limited to two hundred, and applications are accepted in the order in which they are received until the quota has been filled.

HARRY B. MCCARTHY, *Chairman,*
815 Medical Arts Bldg.,
Baltimore, Md.

THE DALLAS MID-WINTER DENTAL CLINIC will be held in Dallas, Texas, February 10-12, 1930.

Clinicians: George M. Hollenback of Los Angeles, crown and bridge; R. O. Schlosser of Chicago, prosthetics; Thomas P. Hinman of Atlanta, surgery; W. J. Charters of Des Moines, periodontia.

BROOKS BELL, JR., D.D.S., *Sec'y,*
1810 Medical Arts Bldg.,
Dallas, Texas.

THE KINGS COUNTY DENTAL SOCIETY will hold its Mid-Year Meeting at the Brooklyn Elks Club, Livingston and Boerum Streets, Brooklyn, N. Y., February 19-22, 1930.

Clinicians: W. E. Cummer, Toronto, Canada; W. L. Doxtater, Francis Scott Weir, Simon Shapiro, Henry Wasserman, Fred Adams, Adolph Berger, James K. Burgess, Clyde Schuyler, Theodore Blum, Victor Hugo Sears, L. I. Abelson, A. L. Greenfield, S. Both, John T. Hanks, H. Pratt, M. Strausberg, S. Wolfson.

Topic Discussions: L. W. Dunham, *Dental Economics;* J. P. Ruyl, *Full Denture Service;* A. Walker, *Operative Dentistry;* M. I. Schamberg, *Oral Surgery;* John Oppie McCall, *Periodontia.*

There will be a manufacturers' exhibit in the main ballroom.

Registration to attend the clinics must be made in advance.

The four days' meeting will terminate on Saturday evening, February 22nd, with a banquet and dance in the Elks grand ballroom.

THE MINNESOTA STATE DENTAL ASSOCIATION will hold its forty-seventh annual meeting in the Auditorium, Minneapolis, Minn., February 26-28, 1930. A cordial invitation to attend is extended to all members of the American Dental Association.

GEO. D. ESTES, *Secretary,*
911 Medical Arts Bldg.,
Minneapolis, Minn.

THE CENTRAL PENNSYLVANIA DENTAL SOCIETY will hold its twenty-eighth annual meeting in Altoona, Pa., February 26-28, 1930, at the Penn Alto Hotel.

R. L. MCKIM, *President,*
Osceola Mills, Pa.
J. G. SHAFFER, *Chairman,*
Local Arrangements Committee,
1200 14th Ave., Altoona, Pa.

THE ALABAMA DENTAL ASSOCIATION will hold its sixty-first annual meeting in Montgomery, Ala., April 15-17, 1930.

F. F. PERRY, *Secretary,*
Montgomery, Ala.

THE CONNECTICUT STATE DENTAL ASSOCIATION will hold its annual meeting at Stamford, Conn., April 22-24, 1930.

THE CONNECTICUT DENTAL HYGIENISTS' ASSOCIATION will hold its annual meeting at the Stamford High School, Stamford, Conn., April 23-24, 1930.

EVELYN J. MAHER, *Secretary.*

THE MASSACHUSETTS DENTAL SOCIETY will hold its annual meeting at the Copley-Plaza Hotel, Boston, Mass., May 5-9, 1930.

THOMAS K. ROSS, *President,*
280 Main St., Fitchburg, Mass.

PHILIP E. ADAMS, *Secretary,*
236 Newbury St., Boston, Mass.

THE TEXAS STATE DENTAL SOCIETY will hold its fifteenth annual convention at Fort Worth, Texas, May 20-23, 1930.

A cordial invitation to attend is extended to all dentists who are members of the American Dental Association.

For information relative to exhibits write to Dr. W. H. Nugent, Chairman, 713 Medical Arts Bldg., Fort Worth, Texas.

GEORGE H. MENGEL, *President,*
El Paso, Texas.

J. G. FIFE, *Sec'y.-Treas.,*
Dallas, Texas.

THE AMERICAN DENTAL HYGIENISTS ASSOCIATION will hold its seventh annual meeting in Denver, Colorado, July 21-25, 1930.

AGNES G. MORRIS, *Secretary,*
886 Main Street,
Bridgeport, Conn.